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City of Cambridge.

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THE

MAYOR'S ADDRESS

AT THE

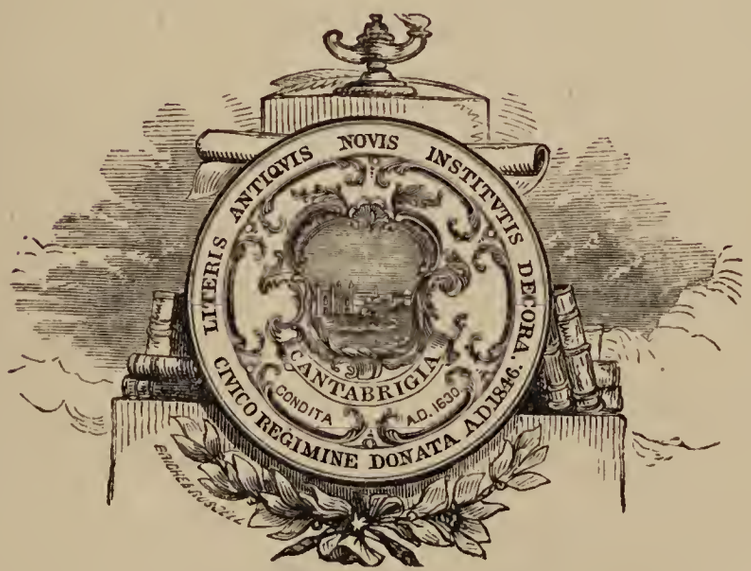
Organization of the City Government,

AND THE

ANNUAL REPORTS

MADE TO

THE CITY COUNCIL.



CAMBRIDGE:
PRESS OF JOHN WILSON AND SON.
1874.

CITY OF CAMBRIDGE.

In Common Council, *January* 7, 1874.

Ordered, That twelve hundred copies of the Mayor's Inaugural Address, together with the Annual Report of the Committee on Finance, made to the last City Council, with the accompanying documents, and such other documents as have been ordered to be printed by the City Council, be printed under the direction of the City Clerk, for general distribution.

Sent up for concurrence.

Attest: J. WARREN COTTON, *Clerk.*

In Board of Aldermen, *January* 7, 1874.

Concurred.

Attest: JUSTIN A. JACOBS, *City Clerk.*

January 9, 1874.

Approved.

ISAAC BRADFORD, *Mayor.*

ADDRESS

OF

HON. ISAAC BRADFORD,

MAYOR.

Gentlemen of the City Council: —

In entering upon this a second term of office, I may be pardoned the expression of a sense of high indebtedness to my fellow-citizens, for the exceedingly complimentary bestowal of confidence with which I have again been honored at their hands; and would felicitate them, through you their representatives, upon having been exempted during the past year from the more afflicting ravages of fire and plague, and made, notwithstanding the recent financial depression, the beneficiaries of so material and promising a prosperity.

The responsibilities accepted in our presence here this morning are to demand of us, in the performance of coming duties, the exercise of a considerate and ever dispassionate judgment. We are to assure the citizen that, however humble his condition, whatever his creed, or whence his birthplace, his are equal rights within this municipality, that extends to all an equal encouragement. With questions that shall arise to perplex our decision we

are to apply the test of necessity; and use a discriminating economy, devoid of parsimony. The present is to be called upon to provide in part for the needs of the future; and undertakings already begun are to be carried through to completion. In general, whatever tends to the health and protection of the community is to obtain our acceptance; while that which points to the advancement of its prosperity is to merit of us our closest deliberation.

As preliminary to undertaking these labors, and as being conformable with custom, I now submit a synopsis of the present condition of the city, together with certain recommendations for your consideration, beginning with: —

FINANCE.

Total appropriations for 1873	$2,310,335.68
Total expenditures	2,065,858.27
Unexpended balance	$244,477.41

There was a cash balance in the Treasury, Dec. 1, 1872, of	$5,648.26
Existing balance, Dec. 1, 1873	137,142.68
Gain in cash balance	$131,494.42

The total debt of the City is found to be as follows, Dec. 1, 1873: —

Trust Funds	Daniel White Charity	$5,000.00
	Dowse Institute	10,000.00
	Sanders Temperance Fund	10,000.00
City Bonds		1,342,000.00
Water Bonds		1,273,400.00
Sundry notes of the City		382,800.00
State and County tax for 1873		103,456.91
Unpaid approved bills, and interest due		1,020.60
Total debt		$3,127,677.51

As offset to this indebtedness: —

General Sinking Fund	$105,602.60
Water Works Sinking Fund	187,685.66
Cash on hand	137,142.68
Total	$430,430.94

Which amount, when subtracted from the amount of total debt, leaves: —

Balance between liabilities and assets	$2,697,246.57

Comparing this balance with the corresponding balance for Dec. 1, 1872	$2,010,736.75
There is found for absolute increase of indebtedness during the year	$686,509.82

The sundry notes of the City included in the above exhibited debt are as follows: —

Coming due in year 1874	$328,800.00
" " " " 1875	24,000.00
" " " " 1877	30,000.00
Total	$382,800.00

The notes that come due the present year are thus distributed: —

On demand (being unpaid bills and interest due)	$1,020.60
In February	30,000.00
" May	67,000.00
" June	62,000.00
" October	76,800.00
" November	93,000.00
Total	$329,820.60

This amount will have to be met by us in payment, as also the further sum of at least $400,000, compounded of the three imperative items of: —

Work on low lands	$150,000.00
Bridge Street Sewer	150,000.00
Craigie Bridge	100,000.00
Total	$400,000.00

Making in all, $730,000 to be carried to loan, and for which bonds will necessarily have to be issued.

Besides which, there will be the accustomed annual provision for extensions on Water Works, as also an appropriation for any additional undertakings we may specially authorize ourselves.

Accordingly we may expect to be called upon to negotiate not far from a million dollars worth of bonds this present financial year, which, under an early authorization, may not be found impossible to do. During the past year there were negotiated $956,000 worth, of which $335,000 were Water Bonds, and the remainder divided as follows: —

10 year bonds.	Funding Loan	$212,000.00
	Building ,,	37,000.00
	Low-lands ,,	103,000.00
		$352,000.00
20 year bonds.	Street Loan	$13,000.00
	Paving ,,	100,000.00
	Land ,,	10,000.00
		$123,000.00
30 year bonds.	Sewer Loan	$136,000.00
	Street Widening Loan	10,000.00
		$146,000.00

Of these, $103,000 Low Land Bonds were sold to the Commissioners of the Sinking Fund, and are laid aside as part of the assets of that fund. And it is in this connection that the Finance Committee indulge a critical remark,

"That though the letter of the law be complied with, yet its spirit may unintentionally be violated." For when the bonds issued to outside holders shall mature and be presented for payment, the Sinking Fund will contain, if this course be pursued, nothing else than other bonds of the city, with which to liquidate those presented.

The Committee suggest that the ordinance in relation to the same be so far amended as to restrict investments for the benefit of the Sinking Fund to bonds alone of the State of Massachusetts, or those of the United States. One other course also presents, and that the allowing, as now, of the purchase of bonds of the city, only limiting the power, so that none shall be purchased except outstanding ones, of a date prior to the year in which the investment is made. This is certainly a matter for grave reflection, as being vital to the whole question of debt and its control; and I bespeak for it the attention its importance should claim.

Finally, a special sum of $76,000, due to funding of debt, will have to be raised by taxation the present year, in compliance with the ordinance requiring $10,000 for funded debt previous to 1872, and six per cent on ten year loans, three per cent on twenty year, and one and a half per cent on thirty year, aggregating $38,000 for Sinking Fund, and $38,000 for interest on the bonds.

WATER WORKS.

The extensions on Water Works for the past year have amounted to $219,030.21, making the total cost of the Works up to Dec. 1, 1873, to be $1,249,415.07.

The receipts from water takers have been $146,117.32, giving an increase of $18,916.02 over those for 1872, and

about $34,000 above those of the year before; while the excess of receipts over expenditures has amounted to $59,624.92, being an increase over the like balance for 1872 of $5,197.94.

This excess, which is carried to the account of the Sinking Fund, though showing a continued increase, must not be taken as an argument for the reduction of water rates, but rather considered as a gratifying evidence that there is being maintained the proper ratio, which it is so desirable should exist, between the fund and the constantly aggregating cost of the Works.

On Dec. 1 last, there was 33½ inches less depth of water in the Pond than at the same date the year previous. This subsidence represents a loss of 167,000,000 gallons in store, which, when considered in connection with the fact that there was pumped during that period an increased quantity of water of about equal amount to this loss, being 182,000,000 gallons, naturally raises the question whether the Pond be as inexhaustible as has heretofore been supposed.

Without inquiring rigorously into the source of its supply, whether it partake of the general water level of the vicinity, or enjoy the more secure font of an Artesian origin, we shall best answer the requirements of prudence by making immediate provision against any and every contingency that may ensue.

I therefore recommend that appropriation be made for connecting "Fresh, Little, and Spy Ponds by a suitable conduit," the Water Board having expressed in their Report an intention of asking for the same.

The Water Board further express an intention of asking for an appropriation "for cleaning out the borders of

Fresh Pond," and "for cleaning out Alewife Brook, and erecting tide-gates, when authority for doing the latter is obtained from the Legislature;" and they advise, as part of a comprehensive plan, that a new main be laid through the city by way of Brattle, Mount Auburn, and Putnam Streets, to Pearl, and thence to the Universalist Church on Main Street, at the junction of Front. This extension, I feel, may be permitted to wait for the present, in view of our large financial engagements, and accordingly find myself constrained thus to interpose.

Petition has been made to the General Court, on the part of the city, "for leave to erect tide-gates on Alewife Brook, for the purpose of shutting out the fish from Fresh Pond." In addition to this, the Board requests that we further petition, —

1. "That the city of Cambridge be granted the right to make and execute police regulations for the borders of Fresh Pond, in whatever town or city it may lay." And,

2. "That we be permitted to take water from such streams as can be conveniently brought to reinforce our present water supply, when by so doing we shall not interfere with any rights already granted to others."

The desirableness of possessing these powers is so obvious, that I abstain from comment.

Of the many improvements carried through the past year, some of the more noteworthy as attaching to this department are, —

1. The laying of a duplicate water-main (20-inch cement pipe) from Walden Street, near the Reservoir, to Third Street in East Cambridge, designed to insure the steam manufactories of the Third Ward against possible failure of water, by reason of necessity that occasionally occurs

for shutting off entire where only a single main exists; also for guaranteeing full supply in case of fire, and reinforcing the other distributing mains along the line of its route, the same costing $75,000.

2. The building of a new engine-house near the site of the former one, in which there are being set "Worthington" pumps of large capacity, and the grading of the premises about the same, the whole costing not far from $110,000.

3. The laying of an additional pumping main from the engine-house to the Reservoir, to guard in security against accident at a point where accident would be of the severest experience. Cost, $30,000.

4. The construction of a sewer from Vassal Lane around to Alewife Brook, 2,800 feet in length, together with a surmounting road, 50 feet in width, at combined cost of $35,000. And,

5. The erection of an iron fence around the Reservoir (now under contract) to the exclusion of animals, and for protection of children against casualty, the place having become one of considerable resort.

Besides these larger undertakings, there are the ordinary smaller works of the year, which are to be found detailed in the Superintendent's Report.

SCHOOLS.

Our schools continue to maintain a reputation for excellence, being possessed of the services of a corps of competent and experienced teachers.

The number of teachers at present employed is 171, being an increase of six for the year; whilst the number of

scholars has increased 597, making at the present time 7,730 in all who are the recipients of public instruction.

The past year has seen much desired alterations made in the interior arrangements of the Shepard, Webster, and Allston Grammar school-houses; which alterations have consisted in the enlarging and entire remodelling of the buildings, and have resulted in the obtaining of an increased number of rooms. This has been done upon recommendation from the School Committee, to the end that the scholars may be divided into classes of standard size, the better to facilitate their studies.

The Willard Primary has also undergone alterations of a like nature and to the same purpose, and there remain only the Gore and Sargent Primaries to receive attention in the subdivision of their larger rooms, after which the belief is assured that no further changes will be necessary, as there will then be secured an entire compliance with all the requirements of the system of instruction employed.

The needs for a new primary school-house in the neighborhood of North Avenue, on the dividing line of Wards One and Five, are represented as pressing. The securing of land for this purpose has engaged the attention of the past City Council; but, owing to the question arising of choice between lots on Mellen and Sacramento Streets, no purchase has as yet been effected. Most probably a renewal of this matter will claim your decision, and an appropriation be asked for the erection of a building.

To supply the means of education to those adults whose opportunities for acquiring such have previously been limited, is the aim of the Evening Schools. They hold session during the winter months in different parts of the city, open to both sexes, and rank an attendance that is quite large.

A real interest is manifested by pupils, and marked proficiency is frequently observed.

It is known that many who have received instruction in these schools are now engaged in successful pursuits, enjoying benefits to which their endeavors have fairly entitled them.

The Industrial School, at present closed, will be reopened as soon as the completion of the building on Western Avenue provides a room wherein to arrange articles necessary to the studies; and the Training School, which seems to have been successful in its object, continues in part to furnish teachers to act as substitutes, and fill vacancies when they occur.

The expenditures have been as follows: —

For general instruction	$143,010.18
Evening schools for adults	2,053.08
Care and repair of school-houses	45,740.38
Alterations of school-houses	28,337.50
Summing up a total of	$219,141.14

POLICE.

The expenditure for the Police Department for the year just closed has amounted to $62,063.59, of which sum $3,964.20 has been returned to the treasury through receipts from court fees to officers.

The number of arrests has been 1,538, a decrease of 149 from the year before; and the number of lodgers accommodated at the several station-houses, 1,919, an increase of 478. The value of property stolen has amounted to $8,364; and of that recovered, $7,007. Two deaths have occurred in the persons of Mr. J. S. Milliken and Mr. Henry Kinsley, both efficient and esteemed officers,

whose memories are deserving a tribute of respect, in recognition of long-continued and useful services.

The force at present consists of fifty members, including the Chief; and though it has gained somewhat in effectiveness by reason of the restoration of five officers formerly detailed for truant duty, which duty is now performed exclusively under direction of the School Committee, still it furnishes a number entirely inadequate to the full and satisfactory performance of all the extended requirements of the service.

The Chief of Police in his Report presents cogent reasons for an increase of his force, and shows that by the appointment of ten additional patrolmen the ability will then exist for the formation of two night reliefs of equal strength to the single one that is now alone enjoyed. Recognizing as I do the absolute need for this enlargement, in that it will guarantee greater safety, and yield a particular protection during the early morning and evening hours, where now it is not possessed, I urgently and unhesitatingly recommend that the force be at once increased to sixty members; and though by so doing the annual appropriation will be extended $11,000, yet, when it is remembered that the whole aim of government is security to life, limb, and property, and that whatever tends to advance this security is proper of adoption, no such mere consideration as this comparatively slight pecuniary one ought to weigh in interposition to prevent the furtherance of a purpose thus highly important.

The Chief further speaks of the great convenience and benefit that would be derived from the introduction of a Dial Telegraph into the city as a police adjunct.

Wherever one has been established, its usefulness has

been fully demonstrated; and particularly would this be the case within our own extended limits. The entire cost would not exceed $2,500, with no after expense of maintaining batteries, as the operator (who may be without experience) generates mechanically the required electric current at time of use. In the promise of much valuable aid, not only to the Police, but to all other departments of the city as well, I renew my recommendation of last year that this system of telegraph be inserted.

POLICE COURT.

I also recommend that, as land has been purchased in Brattle Square, Ward One, for the erection of a Police Court and Engine-house, immediate steps be taken for the procurement of plans and the engagement of work on the building; the demands of the Court requiring that some place should early be furnished wherein to hold session, having surroundings more comportable with its dignity and influence than that at present existing.

FIRE DEPARTMENT.

The Fire Department consists of one hundred and seven members, and has in active service four steam fire-engines, four hose-carriages, two hook-and-ladder trucks, and sixteen horses, besides having two steamers and three hose-carriages kept in reserve. The total expenditures of the Department for the past year have amounted to $59,452.55, including the sum of $8,660 paid out for new hose, telegraph signal-boxes, and repairs upon steamers.

The total loss by fire reported during this period has amounted to $200,809.91, upon which there was insurance to the extent of $112,138.75.

The Chief Engineer again calls attention to certain alterations required to be made in Engine-houses Nos. Two and Four, and to the insufficient accommodation possessed by Steamer Company No. 1. He also renews his former request for the passage of a building act, as a means of assuring greater security against fire ; and recommends that old Engine No. 2, lately repaired, be placed in commission, with a company organized to take charge of it. Further, he recommends that heating apparatus be attached to each of the steamers for the purpose of maintaining at all times a head of steam, so that effective service may be rendered immediately upon arrival at fires occurring in the near neighborhood of stations. And, finally, suggests for your consideration the question, whether it would be of advantage to the city to change the organization of the Department, by making it to consist wholly of permanently employed members.

Of these several propositions, the ones relating to alterations of houses and the ordinance controlling the erection of buildings receive my entire indorsement: regarding the others, however, not being fully decided as to their absolute importance, I reserve an opinion.

The fire-alarm telegraph is reported to be in a very effective and trustworthy condition. Four new boxes have been added during the year, making the whole number now in service to be forty-four. More are represented as being needed, and I advise that they be supplied, as also that a bell-striker be placed in Ward Four. The water supply for the extinguishment of fires has been largely increased, sixty-six new hydrants having been set; of which thirty-six are of the post pattern, regarded as superior to those of the older style.

It is gratifying to be able to add that there have been no

fires of magnitude during this time, nor have any firemen been seriously injured while in the discharge of their duties; and, further, that a high efficiency joined with commendable rivalry prevails throughout the Department.

ENGINEERING.

The Department of Engineering has been maintained the past year at the moderate sum of $6,307.36, including at the same time the salary of the City Engineer.

There have been built seven miles of sewers, running through sixty-six streets, and costing $106,871.88; which makes the total number of miles of sewers in the city to be 47.7, constructed at a total cost of $494,516.86.

The City Engineer calls attention to the want of consultation and prearrangement on the part of the different Departments in the execution of their separate projects, whereby the labor of one day often becomes nullified in that of the next; and suggests as a remedy the establishment of a Bureau of Public Works, to be invested with controlling powers for the regulation of this matter. Without discussing at all the advisability of such an investiture, I submit, as a measure of relief, whether a plan might not be adopted requiring water and gas pipes and sewers to be supplied at the time of their laying with lateral branches extending at once to the line of the curbstone. Were this done, unquestionably much of the evil at present experienced in the continual tearing up of streets would be avoided, and a result obtained securing largely an exemption from all this consequent damage and great needless expense.

Two other matters worthy of mention are the entering of drains and construction of cesspools. With regard to

the first, the high importance of always having the work done properly, and the faulty manner in which it is sometimes performed by parties obtaining permission to enter, would seem to justify the appointment of a competent agent, duly authorized, to engage in this particular work. And as to the second, that of cesspools, either an ordinance should be passed defining strictly the manner of their construction, or else a repeal be made of the existing ordinance, and the use of them in the city be altogether abandoned, leaving it for the house sewage to be delivered immediately into the drains, with the simple intervention of water-traps.

Having thus presented in brief these reflections, I pass to the more general subject of sewers.

SEWERS.

There are no improvements that have been undertaken in our city of higher importance than the single division of sewers. The demands both of convenience and health have of late insisted upon a liberal construction of them; and there are now provided in the several wards large main drains of sufficient capacities to receive and convey to tidal water mostly the entire sewage of the city. But when this is said, it must not be understood that the work is completed. There is yet much to be done. The two sewers at present emptying into Broad Canal will have to be carried direct to deep water, and that without further delay; a sewer in Bridge Street, contracted for under legislative enactment, has immediately to be built; and the one at Fresh Pond, now discharging into Alewife Brook at Concord Turnpike, will have shortly to be con-

tinued along the bank of the stream beyond the outlet of the North Avenue trunk. Further, the time is not far distant when an encircling sewer following the river, and taking up all the discharges to be delivered at a point low down, will call for an appropriation quite commensurate with the extensiveness of the plan proposed.

In this enumeration will be found a few of the larger works that will claim our attention. Of them, the Bridge Street sewer will cost $150,000; and the Ninth Street and Harvard Street ones, being on opposite sides of Broad Canal, will require in the aggregate $92,000 to carry them separately to deep water, as they must go, unless the plan just alluded to, of an encircling sewer, shall be found one of practicability.

As has been suggested, with the reclamation of the marshes south of Main Street, an avenue might be laid out parallel with and adjacent to the Boston and Albany Railroad, under which a portion of this sewer could be placed; then continuing it to a junction with the Harvard Street sewer on the north, and crossing the present site of Broad Canal, a course might be pursued by way of Potter and First Streets to Bridge Street, and finally find an exit at Craigie Bridge.

The development of this plan depends, as will be observed, upon one or two essential conditions: First, that Broad Canal shall be filled, its distance at least above Sixth Street; and, secondly, that the flats between West Boston and Craigie Bridges shall also be filled. Of the first, the City Solicitor has given an opinion adverse to the powers of the city, to order a filling of the canal under the Grade Act; and it follows therefore that it can be done only through purchase. Respecting the second, the riparian owners

have already presented a petition to the Harbor Commissioners asking permission to construct a sea-wall, and fill the included flats, which, after some suggested modifications of plan shall have been accepted by the petitioners, will undoubtedly be allowed; thus removing any existing difficulty to be found in this direction, and leaving as the special obstacle to the consummation of the project the necessity for crossing Broad Canal, with the attendant considerations of expense and possible injury to business located along its length. Another way, however, that suggests, possesses the merit of avoiding this issue, by following the line of Portland Street at the head of the canal, and turning instead of crossing it. By whatever course, though, the purpose may be accomplished, the desirableness of transferring the outlets of all the sewers along the water front to a point of common debouchment as far down the river as possible cannot be overestimated; and I feel that it only requires that some comprehensive and feasible plan be devised, to secure for it an unhesitating approval.

Besides these larger sewers, there are also numbers of smaller lateral drains that have not as yet been fully supplied, nor can be whilst new streets are being opened, to present their constantly occurring needs in occupancy.

The cost of construction of some of the main trunks having been large, by reason of size and topographical difficulty experienced, has given rise to much discussion as to the relative amounts that ought to be borne between the city corporate and the citizens more immediately benefited.

The theory of the city as it found expression in the assessments of the year 1872 was that not merely the abutters upon a trunk sewer, but all those estates within

the basin drained, should become sharers in the expense. An appeal from this was taken under writs of *certiorari* to the Supreme Court, from which body a decision is confidently looked for during the present month.

The argument at issue is, whether the statute of 1869, under which these assessments were laid, and which reposes authority in Boards of Aldermen to act as Public Commissioners, can supplant section 19 of the City Charter, that designates the whole City Council as the body authorized to lay drains, "and to require all persons to pay a reasonable sum for the right to open any drain into such public drain or common sewer."

If the law of 1869 shall prevail, then the power will be lodged with the Board of Aldermen alone to construct and assess. On the other hand, shall the City Charter be maintained, then the Council will find in its specified powers the authority to charge for the *right* of entrance, which right may be construed to exist even before use, and immediately upon completion of a sewer.

Meanwhile, awaiting this decision from the court, an ordinance has been passed, having for its aim an equitable arrangement for the future. It provides that an assessment not to exceed fifty cents per running foot of frontage, with certain exemptions for corner lots, shall be laid upon all estates bordering sewers hereafter constructed, regardless of size or cost, and at the same time abandoning the principle of remote benefit.

How to make this ordinance satisfy fully the conditions that shall arise as the result of the pending litigation, will be a question that may find a solution in the general acceptability of its provisions, and the desire to see its continuance assured; thereby obtaining for it such amend-

ment as shall cause it to conform to the declared authority, whether of statute or City Charter.

Before leaving this subject, it is proper I should add that the past City Council declared by resolution the expediency of settling all outstanding claims upon this same basis of ordinance; and accordingly passed an order at a recent date, authorizing the City Treasurer to make a corresponding abatement of previous assessment to all parties desiring to avail themselves of the opportunity offered, — this offer only to remain open until the fifteenth day of the present month, after which time cases continue dependent as heretofore upon decision of court.

STREETS.

There has been expended during the year by the Street Department, for streets and paving, $181,998.57; for widening streets, $12,387.33; and been paid into the treasury, through incidental receipts, the sum of $2,889.93.

Nineteen orders for sidewalks have passed the City Council, of which number seventeen have been completed at an expense of $31,000.00.

Fifty-four streets have been graded in full or part, and forty streets laid out, established, widened, or extended; 55,520 yards of paving laid, and edge-stones set to the extent of 33,043 feet.

Additional land has been procured on Tremont Street, adjacent to the City Stables, at a cost of $10,560.00, and a fence built enclosing it, designed for the storage of wagons and watering-carts; and increased facilities have been provided for breaking stone, in answer to enlarged requirements, due in part to the recent acceptance of numerous streets.

A schedule of property shows a present value of $16,630.00, and the established force consists of forty-three men and twenty-four horses.

The Superintendent of Streets recommends anew, —

1. That a sidewalk be laid on the north-westerly side of River Street. Estimated cost, $7,000.

2. That the lines of Brighton Street be straightened. Estimated cost, $6,000 to $10,000.

3. That Main Street be paved from the "Lower Port" to Prospect Street with square block paving. Estimated cost, $100,000.

In the case of the first of these, the laying a brick sidewalk upon River Street, I am led to believe that a very great want exists, in there being at present but poor accommodation for the large number of pedestrians who daily find occasion to travel its length, and accordingly join with the Superintendent in recommending that one be laid.

And so with the second, the straightening of lines upon Brighton Street, believing the present time to be a peculiarly opportune one for its accomplishment, the necessity having arrived for rebuilding our portion of Brighton Bridge, as also there being an existing call for putting the street in safest condition for travel, I am induced to advise that this likewise meet with your favorable notice.

Regarding the third, however, that of paving Main Street, while I recognize the argument advanced in advocacy a year ago as possessing still an equal force, yet, considering the very large expenditures otherwise to occur, I feel obliged, under the circumstance, to recommend its delay until some of the more pressing sources of extraordinary outlay shall have been satisfied.

For this latter cause I also recommend that no appropriation be made for widening streets beyond the cost of some few minor widenings within districts being filled to grade, and the single rectification of lines just mentioned, the more especially as our streets generally furnish avenues sufficiently wide for all the ordinary purposes of vehicular travel.

There will appear referred over from last year petitions for sidewalks at an estimated cost of $19,000; and there will be required, to meet all demands for streets and paving, inclusive of these sidewalks and exclusive of Main Street paving, the sum of $100,000.

Assessments have been reported for collection to the amount of $15,669.46, which, when paid into the treasury, will inure by ordinance to the benefit of the Sinking Fund for reduction of debt.

Finally, the streets are spoken of by the Superintendent as being in better condition on the whole than they were a year ago, notwithstanding the continual upheaval to which they have been subjected by the laying of drain and pipe.

BRIDGES.

Repairs have been made upon all the bridges during the past year, and steam-power applied to the draw upon West Boston Bridge, with a highly satisfactory result.

The work of making extended alterations upon Craigie Bridge, which was designed to have been undertaken last spring, and which was prevented in the lateness of the season, by the action of the Harbor Commission, requiring as precedent to widening that the existing piling should be reset in the line of the river's current, will now devolve

upon us to carry through. The Commissioners of the two cities, having the bridge in charge, propose to widen it to 64 feet, and replace its draw with a new one having an aperture of 36 feet, to be operated by steam. The estimated cost of this improvement will be not far from $200,000, of which Cambridge will be called upon to pay one half.

Considerable more repairs will have to be made upon all the bridges this present year, with the exception of West Boston, Third, and Sixth Street ones; and possibly a call may come under legislative enactment for rebuilding the one at Prison Point.

The expenditures last year, independent of West Boston and Craigie Bridges, were $9,547.52. The estimates for this year are $12,000.

Care and maintenance of West Boston and Craigie Bridges last year, $8,023.42.

ALMSHOUSE.

There has been expended on account of the Almshouse the past year the sum of $64,051.65; and been derived from the sale of products and other sources, $26,021.69; leaving a balance of expenditure above receipt of $38,029.96; which, when reduced by the sum incurred for small-pox patients, $6,644.85, and the further sum of $4,500.00 —the cost of collection of house-offal above receipts from sale of the same, — leaves a final balance of $26,885.11 as actual expense of maintenance of the poor, including assistance rendered outside of the House. The average number of inmates for the year has been 101, an increase of 15 over that of the year previous.

The Overseers of the Poor refer to the unusually large expenditures of their Department, and explain them by

reason of the enhanced expense attending the collection of house-offal, — which service, though really a health measure, is still made to rest within their supervision, — together with the extraordinary demands resulting from the presence of small-pox in the city, and continued location of the hospital upon the Almshouse grounds. They feel that, while tasked with these extraneous burdens, the charge of extravagance ought not to rest, even should appearances suggest the reflection; for, out of the total appropriation of $64,000, $7,000 was expended in the collection of house-offal, whilst another equal amount had to be passed in depletion to the account of small-pox.

Allusion is made to the large number of truants at present under sentence; and again to the growing difficulty experienced in the way of their proper restraint while out of the school-room. This is owing to the absence of accommodations such as to permit of their being kept separate from the adult inmates, and can only be corrected by the providing of special quarters, or the employment of some suitable person, whose single duty shall be the management and care of these youth. As the first method involves considerable expense, it is hoped that the latter will be the one adopted, even though it be but an experiment, and of temporary continuance.

Some slight additions have been made to the interior of the building, in the way of supplying a much-needed convenience to certain of the inmates; and gas has been introduced throughout, so that in every respect the comfort and safety of the Institution is now well provided for. And under the excellent care of the Warden and Matron it continues to furnish a home to those whose necessities are sufficiently urgent to cause them to seek an asylum.

CEMETERY.

The Commissioners of the Cemetery report the receipts for the year at $12,622.93 ; and expenses, $15,368.61.

In the rapid occupation of the Cemetery, it is foreseen that not many years can elapse before additional land will have to be procured ; and already it is in contemplation to select another site out of town, the estates adjacent to the present being held at too high rates to warrant their purchase. During the past year, a new public lot has been laid out, as also a new soldier's lot of handsome proportions ; and altogether the grounds present an attractiveness highly commendable to the efforts of the Superintendent, and entitling to high rank among the other places of sepulture in the vicinity.

MISCELLANEOUS.

There are three other departments of which brief mention may be made, being those of Lamps, Weights and Measures, and Public Parks.

LAMPS.

It has cost, the past year, to light the streets, $17,075.31 ; the principal thoroughfares having been kept lighted all night, increasing the cost of maintenance $3,000, for which a corresponding safety and convenience are believed to have been enjoyed ; and, further, there have been supplied in one or two dangerous localities lamp-posts at public expense, inaugurating a policy that may judiciously be continued.

WEIGHTS AND MEASURES.

The Sealer reports 837 scales examined, of which number 602 were out of order, and 84 had to be condemned.

He advises that all the city scales be put under cover, they varying weight in winter from 10 to 200 pounds on the ton, by reason of accumulations of ice upon bearings and platform.

He also asks to be furnished with an office in some public building, where full means may be possessed for answering speedily all applications as made. The apparent necessity of the one, and desirableness of the other of these representations, impel me to ask for them your special attention.

PUBLIC PARKS.

In the improved appearance of our Parks, and fine condition of the trees along our streets, are seen evidences of the skilled and devoted labors of our City Forester. An enthusiast in his work, his aim is that the city shall merit the distinction he would claim for it, — of being a Forest City; and to this end he spares no personal effort.

The expenses under this head for the past year have amounted to $2,573.44; and for the ensuing year an appropriation of a few hundred dollars additional is asked for, which I advise be allowed.

LOW LANDS.

The topography of our city is such that we are possessed of large tracts of low lands, having grades below the level of the higher courses of the tide. This condition has

rendered it exceedingly difficult, and at times impossible, to secure drainage to these localities; and, for the better regulation of the matter, an Act of the Legislature was obtained in 1872, establishing the grade of cellars at 13 feet above mean low-water, and the surface of streets at 16 feet. Under the provisions of this Act, orders have been passed directing the filling and raising to grade of the inhabited areas thus situated. The first of these to receive attention was the Washington Street District, so called, upon which work was begun in 1872, and completed quite recently. The total cost of this improvement has amounted to $267,278.04, the whole of which sum may be charged back upon estates directly improved. And it is in this connection that two questions of importance have arisen, the first being, How far is it equitable to hold abutters liable for the filling of unaccepted streets? the second, What accommodation of time shall be given to owners wherein to make payment? Regarding the first, it is advanced that, as these fillings are undertaken for the purpose of conserving the general health, the public, who have thus become sharers in the benefit, should be required to bear a part of the attendant expense, and that no fairer way suggests than the one of charging all streets to the Common Fund. In the matter of the second, the acknowledged hardship which would ensue through enforcement of immediate payment actuates a desire that some relief may obtain, consistent with the preservation of the claims of the city.

It is with a view to effecting these arrangements, that the following petitions were laid before this session of the Legislature by the retired City Council: —

1. "For such an amendment of the Grade Act as will

authorize the City of Cambridge to assume the cost of raising to the required grade private ways in such districts as have been, or may be, ordered to be filled to grade under authority of said city."

2. "For such an amendment of the Grade Act, and of the Act in relation to the Washington Street District, as will extend the lien upon estates filled by the city under the authority of either of said Acts, and authorize the apportionment of the amount of an assessment in the same manner as betterment assessments are by law apportioned."

Should these petitions be granted, and the desired legislation obtained, then all cause for alarm will be removed from those whose anxieties now so severely distress them.

Work is progressing upon three other districts; viz., The Webster Avenue, the Cowperthwait Street, and the Franklin Street, the two former of which are well under way, and will be completed the coming summer; the latter, being much the more extensive one, will not be completed until the year 1875. The estimated cost of the whole is $225,000, of which amount $150,000 will have to be met within the present year.

Also preliminary orders have issued for three more districts, they being in turn, first, the locality including Sparks and Foster Streets, which, from present appearances, will be filled almost entirely by owners themselves; second, the lands adjacent to the new Engine House of the Water Works at Fresh Pond; and, last, the triangular piece of marsh south of and between Main Street and the Boston and Albany Railroad.

As other lands of like character are brought into market, the same restriction will be made to apply, until that most desirable aim is accomplished, — an entire reclamation of them all.

HEALTH.

The health of the city has been in its usual good condition during the past year, with the exception of the small-pox epidemic, which had its severest run during the latter part of 1872 and earlier months of 1873. The total number of cases within the city during its prevalence, dating from Jan. 1, 1872, to the disappearance of the disease, — seventeen months in all, — was 290, of whom 57 died.

At the beginning of 1873, immediate steps were taken by the then incoming Board of Health for removing the existing contagion, in ordering isolation and general and gratuitous vaccination. For the carrying out of this purpose, the city was districted among our resident physicians, whose earnest efforts most cordially aided the Board. With the enforcement of these particular means, its presence began at once to diminish, the cases continuing to become milder in form and less frequent in number, until finally they disappeared with the last reported one of May 26. The entire cost of the epidemic amounted to $22,000, a sum quite considerable in itself; but, when viewed in comparison with the threatening character of the epidemic that assailed, and the happy and speedy suppression of it, there is found to be a matter for congratulation in the fact that no larger number of lives were destroyed, and no greater expense was incurred.

During the summer months, superior efforts were made, with most gratifying success, to remove every cause of existing nuisance within the city's limits. Again the society of physicians rendered valuable aid, by accepting appointment as an Advisory Board; and to their judicious and experienced advice in the removal of all provoking causes of disease, the citizens are largely indebted.

In thus presenting to view the accomplishments of last year, it is for the purpose of reminding that, though we have thus far been fortunate in a fair enjoyment of public health, yet immunity from disastrous attack can only be obtained by a never-yielding watchfulness, and utmost rigor in fulfilment of sanitary requirements.

DISPENSARY.

With the growth of our population, new wants have become manifest, one of the most notable of which is that of a Medical Dispensary, similar to the ones existing in some other cities of the country. Such an institution would be of great practical usefulness, and could be maintained at a moderate cost, assurance being given that no difficulty shall be experienced in securing the volunteer services of competent physicians to undertake the charge of direction. The new building on Western Avenue could supply the room, and the only expense incurred would be in the purchase of medicines; and the employment of one physician in each ward, at an individual compensation not exceeding two hundred dollars per annum, for the care of those who, after having once visited the Dispensary, might be unable to continue their visits. Such an arrangement could not fail to be acceptable to the Overseers of the Poor, in furnishing a place where to direct the sick, and in the exemption that would obtain to them from pecuniary appeals of this nature. In view of this consideration, taken in connection with all the more positive benefits to be derived, I earnestly ask for the subject your careful attention, in the hope that it will meet your approval and receive an early inauguration.

GENTLEMEN: —

In conclusion, I would remark that while demands continue to be made for the laying out, widening, and accepting of streets, the building of drains, and constructing of sidewalks, expenditures must go on, and no alternative to the increase of debt presents but that of suspending every improvement, and in one general vote giving all petitioners leave to withdraw. That such a course would excite the intensest dissatisfaction, cannot for once be doubted; for though the desire for economy be largely expressed, yet it is the farthest from expectation that citizens possessing particular wants are to be brought under its rude and unwelcome operation. No, rather is it to be recognized that, with the demanding needs of a rapidly growing city, large sums must of necessity be appropriated for securing the comfort and health of its inhabitants; and that, in so far as the same be devoted to works of permanent character, there will be obtained a full equivalent for any expenditure made. Thus convinced, we shall find warrant for carrying through to completion projects already begun, and for authorizing new undertakings of more pressing importance; while in the enhanced value of real property, consequent to these improvements, there will be obtained enlarged resources with which to lighten the burden of debt thus occasioned. Until, all the graver wants of the municipality being provided for, nothing shall remain but an inexpensive after enjoyment of resulting advantages, finding realization in a vigorous and enduring prosperity.

ISAAC BRADFORD.

CAMBRIDGE, January 5, 1874.

ANNUAL REPORT

OF

THE COMMITTEE ON FINANCE.

As by the City Ordinance is required, the Joint Standing Committee on Finance submits respectfully to the City Council its Annual Report for the year ending Nov. 30, 1873.

There was appropriated by the City Council at the commencement of the year an amount at that time supposed to be sufficient; but it was found necessary later in the year, owing to unforeseen circumstances, and the eager desire of the citizens that certain health improvements be made, to appropriate further large sums.

The appropriations for the year were as follows: —

Appropriations by Annual Supply Bill	$2,131,335.68
Subsequently added: —	
For land of John Livermore for the laying out Sixth Street as awarded by Referees . .	13,000.00
For widening streets	5,000.00
,, large sewer in Dublin Street	50,000.00
,, land to enlarge City Stable Yard . . .	11,000.00
,, filling the Franklin, Cowperthwaite, and Cambridge Street Districts, so called . .	100,000.00
Total Appropriations for year	$2,310,335.68
,, Expenditures under Appropriations . . .	2,065,858.27
Balance	$244,477.41

RECEIPTS AND EXPENDITURES AT THE TREASURY.

Balance of Cash on hand, Dec. 1, 1872	$5,648.26
Receipts of Cash for the year	3,354,569.28
Total Cash Receipts	$3,360,217.54
Total Expenditures during the year	3,223,074.86
Balance, Cash in Treasury, Dec. 1, 1873	$137,142.68

SINKING FUND OF THE WATER WORKS.

This Fund was, June 30, 1872	$129,348.17
Added during the year: —	
Interest on Balance of Receipts and Payments	2,195.62
,, on Fund	8,314.83
Amount from Water Rates	47,827.04
Total Fund, June 30, 1873	$187,685.66
This Fund is invested as follows: —	
Cambridge Water Loan Bonds	$186,823.00
Temporary Loan to the City	862.66
	$187,685.66

SINKING FUNDS OF THE CITY OTHER THAN SINKING FUND OF THE WATER WORKS.

These Funds are for the liquidation of the City Debt previous to the passage of the Ordinance creating these Funds, and also for meeting the payment of all Bonds issued by the City other than the Water Bonds.

These Funds were, Dec. 1, 1872	$40,110.51
Added during the year: —	
Interest on Fund	2,856.87
For funding Old Debt	10,000.00
,, Loan negotiated for ten years	2,009.44
,, ,, ,, twenty years	31,875.43
,, ,, ,, thirty years	18,750.35
Total, Dec. 1, 1873	$105,602.60

These Funds are invested in Bonds of the City.

It is the duty of your Committee to state, in connection with the Sinking Funds, that the Ordinance creating them, and prescribing the way in which they shall be invested, seems to leave the way open for any Commissioners unintentionally to violate the spirit while following the letter of the law; for the spirit of the law is that these funds shall be so invested that, when any of the debt becomes due which these funds are created to liquidate, the investments may be used for said liquidation, and the City shall not be obliged to create a new debt for the payment of the old, or to raise by taxation the same year that the debt becomes due the sum requisite to liquidate it. If we are each year to invest the amount of money belonging to these funds in notes of the City made for the very purpose, as was done last year, or to invest these funds in bonds of the City issued for that express purpose, as has been done this year, where shall we end, and when shall we ever get out of debt?

Supposing that next year the City had coming due $350,000.00 of their Low Land Bonds, upon which the citizens had for ten years paid six per cent. to the holders of said bonds, and also six per cent. for the Sinking Fund for ten years, as the Ordinance requires them to do, and that all assessments coming from such low lands had been given to the Commissioners of said Sinking Funds, and all these funds invested, as we have before stated, in notes of the City, or bonds of the City made or issued for the very purpose, how could we avail ourselves of these funds for the liquidation of the outstanding debt? The effect is that the City must either create a new debt, or tax the citizens the same year that the debt becomes due to the whole amount of the debt; and if the latter course is taken, even on the amount under consideration upon the present valuation, it would increase the rate of taxation about six dollars on the thousand, making the rate, if it were fourteen dollars, about twenty dollars on the thousand; and would there not be in every mouth the cry for retrenchment and reform, and with just reason?

We urge the consideration of this subject because we feel that, if the Ordinance can now be so changed that the funds should be invested in United States Bonds or some other good security outside of the City which can readily be used for the liquidation of

debt as it becomes due, it will in the future save the property-holders from distress, and the City from great embarrassment.

ANALYSIS OF THE CITY DEBT.

Amount of City Debt, Dec. 1, 1872	$2,185,843.69
Added during the year: —	
State and County Taxes	103,456.91
Bonds and Notes of the City	1,242,800.00
Bills approved and Interest due not paid	1,020.60
	$3,533,121.20
Deduct City Debt paid in 1873	405,443.69
Total City Debt, Dec. 1, 1873	3,127,677.51
Deduct City Debt, Dec. 1, 1872	2,185,843.69
Increase of Debt during year	$941,833.82

The classification of the entire City Debt: —

Daniel White Charity	$5,000.00
Dowse Institute Fund	10,000.00
Sanders Temperance Fund	10,000.00
Cambridge Water Loan Bonds outstanding	1,083,400.00
,, ,, in hands of Trustees of Sinking Fund of Water Works	190,000.00
Cambridge City Bonds outstanding	1,239,000.00
,, ,, in hands of Commissioners	103,000.00
Notes of City outstanding	382,800.00
State Tax	65,902.50
County Tax	37,554.41
Bills approved and Interest due, not paid	1,020.60
Total	$3,127,677.51

POLLS AND VALUATION OF ESTATES.

The following table may be interesting, showing the valuation of the Personal and Real Estate, also the number of Polls and Dwellings in the city as taken from the Assessors' books of May 1, 1873, and compared with the same of May 1, 1872: —

Polls and Valuation of Estates for 1872.

Ward.	No. of Polls.	Personal Estate.	Real Estate.	Total.	No. of Dwellings.
1	1,743	$6,109,900	$11,680,600	$17,790,500	1220
2	2,935	4,493,850	9,818,000	14,311,850	1904
3	2,701	2,241,100	6,322,400	8,563,500	1256
4	2,433	1,820,600	6,337,300	8,157,900	1606
5	1,055	1,368,000	5,056,600	6,424,600	642
Total .	10,867	$16,033,450	$39,214,900	$55,248,350	6628

Polls and Valuation of Estates for 1873.

Ward.	No. of Polls.	Personal Estate.	Real Estate.	Total.	No. of Dwellings.
1	1,839	$6,189,360	$12.454,300	$18,643,660	1267
2	3,287	4,854,175	11,604,400	16,458,575	2008
3	2,843	2,290,580	7,365,900	9,656,480	1315
4	2,640	2,164,200	7,917,000	10,081,200	1740
5	1,078	1,465,400	6,115,900	7,581,300	726
Total .	11,687	$16,963,715	$45,457,500	$62,421,215	7056

Respectfully submitted.

ISAAC BRADFORD,
ISAAC S. MORSE,
JAMES H. COLLINS,
F. H. WHITMAN,
A. P. CLARKE,
F. IVERS,
G. C. W. FULLER,
} *Committee on Finance.*

DECEMBER 31, 1873.

REPORT

CONCERNING

THE ACCOUNTS OF THE TREASURER.

In Committee on Finance, *Dec.* 31, 1873.

As your Sub-Committee appointed to see that the books of the City Treasurer and Auditor were examined for the financial year ending Nov. 30, 1873, I would respectfully

REPORT:

That the duty has been attended to by the employment of Mr. Watson Gore, the same gentleman who so satisfactorily examined the books last year; and I am pleased to be able to say that Mr. Gore, after going through the examination, reports that the accuracy with which the City's accounts are computed and kept, and the City's money paid, is wonderful, there being necessarily much detail, and much money paid upon each pay-day in small amounts.

Mr. Gore states that but very few and slight errors were discovered in the computing of the bills, many of which require microscopic examination to decipher them, and the City has lost nothing by such errors. Any apparent discrepancies have upon examination been reconciled.

Mr. Gore states that he has thoroughly examined and computed each and every item of the Treasurer's and Auditor's accounts, and they are now, Dec. 1, 1873, correct; and that the books of the Treasurer and Auditor agree in every particular, showing in the Treasury a balance of cash of $137,142.68.

Also there are in the Treasurer's hands two thousand dollars of the Water Loan Bonds more than are called for by his accounts.

F. H. WHITMAN,

Sub-Committee.

SCHEDULE OF EXPENDITURES

FOR

THE FINANCIAL YEAR ENDING NOVEMBER 30, 1873.

For Instruction in Public Schools.

Salary of Superintendent	$3,000.00	
Salaries of Teachers	139,700.40	
		$142,700.40
Appropriation . .	$140,000.00	
Additional Appropriation	2,700.40	
	$142,700.40	
Amount of Expenses	142,700.40	

For Scientific Department of High School.

Chemicals, &c.		$9.78
Appropriation	$100.00	
Amount of Expenses	9.78	
Balance unexpended	$90.22	

For Text-Books for High School.

Appropriation	$100.00
Balance unexpended	100.00

For Evening Schools for Adults.

Instruction	$1,480.50	
Other Expenses	572.58	
		$2,053.08

Appropriation	$3,000.00	
Amount of Expenses	2,053.08	
Balance unexpended	$946.92	

For Hopkins Fund.

Appropriation	$800.00	
Transferred to "Instruction in Public Schools," towards salary of Classical Teacher in High School .	800.00	

For Compensation of Secretary of School Committee.

Secretary		$300.00
Appropriation	$300.00	
Amount of Expenses	300.00	

For Care and Repairs of School-Houses.

Rent of halls for school-rooms	$75.00	
School furniture	4,754.64	
Fuel	6,586.96	
Care of houses, fires, &c.	8,666.51	
Mats, dusters, &c.	772.33	
Repairs and materials	16,155.08	
Furnaces and repairs	2,937.47	
Books and Stationery	3,459.06	
Other Expenses	2,343.34	
		$45,750.38
Appropriation	$40,000.00	
Additional Appropriation . . .	5,750.38	
		$45,750.38
Amount of Expenses		45,750.38

For New School-Houses and Alterations.

Alterations in Allston School-house .	$9,000.00	
Alterations in Webster School-house .	8,500.00	
Alterations in Shepard School-house .	8,437.50	
Alterations in Willard School-house .	2,400.00	
		$28,337.50

Appropriation	$55,000.00	
Amount of Expenses	28,337.50	
Balance unexpended	$26,662.50	

For Almshouse and Stone Ledge.

Salaries	$2,445.83	
Supplies for the house	7,748.73	
Dry goods and clothing	1,378.11	
Sundry laborers	15,597.24	
Fuel	1,426.98	
Hay, grain, and meal	1,413.43	
Tools, hardware, &c.	943.19	
Assistance to poor out of the house . .	15,419.33	
Support of persons in State institutions	5,473.96	
Expenses for small-pox patients . . .	2,859.67	
Repairs and materials	2,914.02	
Other Expenses	6,431.16	
		$64,051.65
Appropriation . . $55,000.00		
Additional Appropriation 9,126.65		
	$64,126.65	
Amount of Expenses	64,051.65	
Balance unexpended	$75.00	

For Police and Watch.

Chief of Police, salary	$2,000.00	
Services of policemen	56,314.00	
Care of Police Court-room	100.00	
Gas and fuel	606.98	
Repairs	712.08	
Supplies	112.78	
Boarding horses and horse-hire . . .	792.04	
Other Expenses	1,429.71	
		$62.067.59
Appropriation	$64,000.00	
Amount of Expenses	62,067.59	
Balance unexpended	$1,932.41	

For Fire Department.

Chief Engineer, salary	$1,091.13	
Assistant Engineers, salaries	1,278.65	
Clerk of Engineers, salary	47.26	
Services of members	29,208.15	
Fuel wagons	700.00	
Hay, grain, and meal	2,683.01	
Repairs and materials	4,604.48	
Harnesses and repairs	456.91	
Hose and repairs	5,635.24	
Fuel	1,459.90	
Expenses of fire alarm	2,896.33	
Hook-and-ladder house	1,400.00	
Other Expenses	7,991.49	
		$59,452.55
Appropriation	$55,000.00	
Additional Appropriation	4,452.55	
	$59,452.55	
Amount of Expenses	59,452.55	

For Streets and Paving.

Superintendent of Streets, salary (in part)	$1,000.00	
Amount paid for labor	55,603.82	
Paving	92,090.24	
Brick, gravel, and stone	19,629.31	
Engine and boiler	1,691.62	
Horses	1,325.00	
Horse-shoeing and iron-work	2,175.18	
Hay, grain, and meal	4,386.52	
Carts	825.00	
Other Expenses	3,271.88	
		$181,998.57
Appropriation	$182,000.00	
Amount of Expenses	181,998.57	
Balance unexpended	$1.43	

For Sewers and Drains.

Building and repairing sewers and cess-pools		$43,146.40	
Amount paid for labor		2,837.34	
Drain-pipe and laying		9,240.68	
Other Expenses		406.33	
			$55,630.75
Appropriation	$60,000.00		
Additional Appropriation	630.75		
		$60,630.75	
Amount of Expenses		55,630.75	
Balance unexpended		$5,000.00	

For Care and Repairs of Bridges.

Care of draws		$894.23	
Sundry workmen		2,009.05	
Lumber and cement		1,434.73	
Court Street draw		3,577.24	
Sixth Street draw		1,373.86	
Other Expenses		258.41	
			$9,547.52
Appropriation		$10,000.00	
Amount of Expenses		9,547.52	
Balance unexpended		$452.48	

For Care and Maintenance of West Boston and Craigie's Bridges.

Commissioner, salary		$375.00	
Repairs and materials		2,468.53	
Gas-pipe and fixtures		577.84	
Labor		2,031.15	
Paving		426.00	
Engine for draw		1,267.77	
Other Expenses		877.13	
			$8,023.42

Appropriation		$87,000.00	
Amount of Expenses .	$8,023.42		
Transferred	52,356.37		
		60,379.79	
Balance unexpended		$26,620.21	

For Lighting Streets.

Superintendent of Lamps, salary . .		$400.00	
Gas		9,748.65	
Fluid, matches, &c.		394.20	
Care of lamps and lighting		4,291.17	
Posts, lanterns, and repairs		1,809.99	
Other Expenses		431.30	
			$17,075.31
Appropriation		$24,000.00	
Amount of Expenses		17,075.31	
Balance unexpended		$6,924.69	

For Watering Streets.

Paid for watering		$15,043.25	
Stand-pipes		1,781.92	
Sprinklers		5,109.20	
Other Expenses		103.96	
			$22,038.33
Appropriation . . .	$10,000.00		
Additional Appropriation	12,038.33		
		$22,038.33	
Amount of Expenses		22,038.33	

For Salaries of City Officers.

Mayor		$2,500.00
Treasurer		3,000.00
City Clerk		2,000.00
Auditor of Accounts		875.00
City Solicitor		1,200.00
Amount carried forward . . .		$9,575.00

Amount brought forward . . .		$9,575.00	
Superintendent of Streets (in part) . .		1,000.00	
Clerk of Committees		1,425.00	
Clerk of Common Council		300.00	
Board of Assessors		5,400.00	
Inspector of Milk		200.00	
Sealer of Weights and Measures . .		500.00	
Messenger		1,500.00	
			$19,900.00
Appropriation		$20,000.00	
Amount of Expenses		19,900.00	
Balance unexpended . . .		$100.00	

For Cemeteries.

Superintendent, salary		$1,400.00	
Sundry workmen		11,722.91	
Other Expenses		2,245.70	
			$15,368.61
Appropriation . . .	$12,000.00		
Additional Appropriation	3,368.61		
		$15,368.61	
Amount of Expenses		15,368.61	

For Public Squares.

City Forester, services		$487.50	
Labor		936.87	
Expenses of flag-staffs		488.17	
Trees and tree-guards		89.42	
Other Expenses		571.48	
			$2,573.44
Appropriation . . .	$2,500.00		
Additional Appropriation	73.44		
		$2,573.44	
Amount of Expenses		2,573.44	

For Interest and Bank Discounts.

Interest on City Debt		$137,573.04	
Sundry banks, &c., on temporary loans		26,240.91	
			$163,813.95

Appropriation . .	$145,000.00	
Additional Appropriation	18,813.95	
	$163,813.95	
Amount of Expenses	163,813.95	

For Dana Library.

Librarian, salary	$400.00	
Assistants, salary	150.00	
Rent and care of rooms	938.53	
Books and stationery	1,538.22	
Superintendent of Reading-room . .	213.33	
Other Expenses	704.61	
		$3,944.69
Appropriation	$4,000.00	
Amount of Expenses	3,944.69	
Balance unexpended	$55.31	

For Volunteers and their Families.

Amount paid to soldiers' families		$20,000.00
Appropriation	$21,000.00	
Amount of Expenses	20,000.00	
Balance unexpended	$1,000.00	

For Widening Streets.

Damages for widening		$12,387.33
Appropriation . .	$5,000.00	
Additional Appropriation	7,387.33	
	$12,387.33	
Amount of Expenses	12,387.33	

For City Engineering.

City Engineer, salary	$3,000.00	
Assistants	2,304.99	
Maps	170.00	
Horse-keeping and car-fares	500.00	
Other Expenses	332.37	
		$6,307.36

Appropriation		$7,000.00	
Amount of Expenses	$6,307.36		
Transferred	549.17		
		6,856.53	
Balance unexpended		$143.47	

For Care and Repairs of Water Works.

Superintendent, salary		$2,500.00	
Water Registrar, salary		2,000.00	
Clerk of Water Board, salary . . .		200.00	
Assistance in office		1,748.04	
Safe		522.50	
Sundry workmen		7,366.08	
Repairs and iron-work		2,109.28	
Lumber, cement, and packing . . .		333.31	
Fuel and freight		8,541.98	
Other Expenses		2,680.90	
			$28,002.09
Appropriation . .	$25,000.00		
Additional Appropriation	3,002.09		
		$28,002.09	
Amount of Expenses.		28,002.09	

For Supply Account of Water Works.

Sundry workmen		$6,431.68	
Supplies		11,546.68	
Other Expenses		410.06	
			$18,388.42
Appropriation . .	$18,000.00		
Additional Appropriation	388.42		
		$18,388.42	
Amount of Expenses		18,388.42	

For Extension of Water Works.

Sundry workmen	$15,831.21	
Pipes, freight, and laying	118,056.29	
Pump and Boilers	8,000.00	
Amount carried forward . . .	$141,887.50	

Amount brought forward . .	$141,887.50	
Water-gates	7,031.00	
Conduit from Pond	9,000.00	
Hydrants and iron-work	6,366.70	
Lead and packing	3,101.29	
Land for engine-house	5,421.60	
Engine-house	43,363.54	
Other Expenses	2,858.58	
		$219,030.21
Appropriation	$250,000.00	
Amount of Expenses $219,030.21		
Transferred . . . 17,827.04		
	236,857.25	
Balance unexpended	$13,142.75	

For Sinking Fund of Water Works.

Amount paid Trustees of Fund		$47,827.04
Appropriation . . . $30,000.00		
Additional Appropriation 17,827.04		
	$47,827.04	
Amount of Expenses	47,827.04	

For Incidental Expenses.

Legal services and expenses	$703.00
Settlement of claims	1,179.02
Somerville tax-bill	939.52
Belmont tax-bill	99.75
Printing and advertising	6,358.79
Books and stationery	3,696.65
Stamps and postage	470.33
Recording births, death, and marriages .	611.40
City Clerk, for clerical assistance . .	1,375.00
Treasurer, for clerical assistance . . .	850.00
Page of Common Council	50.00
Assistant Assessors, services	728.00
Small-pox expenses	15,270.73
Other health expenses	122.75
Amount carried forward . . .	$32,454.94

Amount brought forward	$32,454.94	
Services of Ward Officers	565.00	
Rent and care of ward-rooms	112.41	
Rent of armory	400.00	
Company C., Fifth Regiment, services	278.80	
Expenses of Decoration Day	1,975.60	
Repairs at City Hall	2,380.74	
Expenses at City Hall	6,198.66	
Horse-hire and car-fares	1,949.50	
Commissioners, Miller's River	728.86	
Water for fire hydrants and reservoirs	12,180.00	
Drinking-fountains	885.00	
Grading Watertown Branch R.R.	1,000.00	
Other Expenses	5,447.13	
		$66,556.64
Appropriation	$60,000.00	
Additional Appropriation	6,556.64	
	$66,556.64	
Amount of Expenses	66,556.64	

For Payment of City Debt.

City Bonds and Notes		$281,635.68
Appropriation	$311,635.68	
Amount of Expenses	$281,635.68	
Transferred	30,000.00	
	$311,635.68	

For Washington Street Improvement.

Land damages	$32,605.35	
Engineering expenses	924.00	
Building sewers	39,763.10	
Filling	137,961.66	
Moving and repairing buildings	3,321.65	
Other expenses	723.00	
		$215,298.76
Appropriation	$248,000.00	
Amount of Expenses	215,298.76	
Balance unexpended	$32,701.24	

For Purchase of Land on Tremont Street.

Paid for land		$10,560.00
Appropriation	$11,000.00	
Amount of Expenses	10,560.00	
Balance unexpended	$440.00	

For Sewer at Fresh Pond.

Constructing sewer		$32,346.89
Appropriation	$30,000.00	
Additional Appropriation	2,346.89	
	$32,346.89	
Amount of Expenses	32,346.89	

For Sewer in Dublin Street.

Constructing sewer		$23,894.24
Appropriation	$40,000.00	
Additional Appropriation	10,000.00	
	$50,000.00	
Amount of Expenses	23,894.24	
Balance unexpended	$26,105.76	

For Street through Land of Livermore.

Land damages		$13,333.89
Appropriation	$13,000.00	
Additional Appropriation	333.89	
	$13,333.89	
Amount of Expenses	13,333.89	

For Ward Room, &c., in Ward Four.

Contractors for building	$34,300.00	
Architect	2,909.72	
Heating apparatus	1,300.00	
		$38,509.72
Appropriation	$85,000.00	
Amount of Expenses	38,509.72	
Balance unexpended	$46,490.28	

For Police Court-Room in Ward One.

Land		$20,000.00
Appropriation . .	$20,000.00	
Amount of Expenses	20,000.00	

For Filling Low Lands.

Franklin Street District	$11,000.00	
Cowperthwaite Street District . . .	14,096.25	
Cambridge Street District	14,445.69	
Portland Street District	4,577.57	
Engineering	387.75	
		$44,507.26
Appropriation . .	$100,000.00	
Amount of Expenses	44,507.26	
Balance unexpended	$55,492.74	

For Sinking Funds.

Amount paid Commissioners on Funds		$62,635.22
Appropriation . .	$50,900.00	
Additional Appropriation	11,735.22	
		$62,635.22
Amount of Expenses	62,635.22	

[See Recapitulation of Expenditures on page 56.]

Dr. JOSEPH WHITNEY, TREASURER,

1872.		
Dec. 1.	Balance on hand	$5,648.26
	Of sundry persons, Rent of Buildings	140.00
	Interest overpaid and refunded	350.00
	State of Massachusetts, Militia Bounty	565.00
	,, ,, Armory Rent	250.00
	,, ,, School Fund	1,682.35
	,, ,, State Aid	20,000.00
	,, ,, Corporation Tax	29,684.99
	,, ,, Military Duty	197.30
	City of Boston, one-half cost of Fluid, Lighting Bridges	113.40
	Henry Sceva, Pumping out Cellar	25.00
	County of Middlesex, Dog Licenses	2,195.86
	J. H. Hall, Old Desks sold	11.00
	County of Middlesex, Rent of Police Court Room	350.00
	Brewster, Sweet, & Co., Interest on Note	5.83
	Security Insurance Co., Return Premium	578.61
	W. H. White, Broken Stools	3.00
	P. H. Raymond, C.E., Old Metal sold	50.48
	J. L Porter, Auctioneer, Old Buildings sold	1,810 00
	Trustees of Hopkins Charity	931.69
	H. Fisher, Peddler's License	25.00
	T. O'Niel, ,, ,,	25.00
	S. C. Knights, Auctioneer, Old Buildings sold	2,009.00
	F. Maguire & Co., Duplicate Bill, refunded	8.75
	Jessop, Easton, & Co., ,, ,, ,,	16.76
	Damage to Street Lamps	1.00
	E. Parmenter, Commissioner, Rent of Building	25.00
	J. A. Jacobs, City Clerk, Circus Licenses	10.00
	,, ,, Auctioneers' Licenses	26.00
	J. W. Fowler, Permit to enter Sewer	20.00
	J. K. Farwell, Supt., Account of Cambridge Cemetery	12,622.93
	Sale of City Bonds, Street Loan	12,317 50
	,, ,, Funding Loan	202,375 00
	,, ,, Paving Loan	94,375.00
	,, ,, Sewer Loan	124,740 00
	,, ,, Water Loan	322,487.50
	,, ,, Building Loan	34,687.50
	,, ,, Street Widening Loan	9,162.50
	,, ,, Land Loan	9,475.00
	,, ,, Low Land Loan	103,000.00
	Sale of City Notes	256,800 00
	Accrued Interest on Bonds, Funding Loan	3,613.83
	,, ,, ,, Water Loan	4,390.00
	,, ,, ,, Sewer Loan	2,252.15
	,, ,, ,, Building Loan	951 67
	,, ,, ,, Land Loan	48 33
	,, ,, ,, Street Loan	35.50
	,, ,, ,, Paving Loan	718.33
	,, ,, ,, Street Widening Loan	215.00
	,, ,, ,, Low Land Loan	2,575.00
	Sundry persons, Weighing Fees	190.68
	,, ,, Paving Assessments	29,866.43
	,, ,, Betterment Assessments	11,894.56
	,, ,, Drain Assessments	6,855.89
	,, ,, Kent-street Bridge Assessments	199.44
	,, ,, Nuisance Assessments	140.00
	Jos. Whitney, Collector, Taxes of 1870	4,842.00
	,, ,, ,, 1871	12,105.60
	,, ,, ,, 1872	53,673.79
	,, ,, ,, 1873	718,276.11
	,, ,, Bank Tax of 1872	158.51
	,, ,, Interest on Taxes	3,557.73
	Sundry persons, Watering Streets	7,425.00
	Cambridge Water Works, Rates, Supplies, &c.	161,108.98
	G. L. Cade, Supt., Account of Streets and Paving	2,889.33
	J. W. Averill, Warden, Account of Cambridge Almshouse	15,279.69
	T. McIntire, Jr., Clerk, Account of Police Court	3,964.20
	C. F Orne, Librarian, Account of Dana Library	348.79
	G. H. Folger, care of lot Cambridge Cemetery	100.00
	Sundry persons and institutions, Temporary Loan	1,063,738.79
		$3,360,217.54

CAMBRIDGE, Nov. 30, 1873.

IN ACCOUNT WITH THE CITY OF CAMBRIDGE. Cr.

1872.	By paid State of Massachusetts, State Tax	$58,580.00
Dec. 1.	,, County of Middlesex, County Tax	33,968.74
	,, Sundry persons, per Mayor's drafts and orders . .	1,620,648.31
	,, State of Massachusetts, Balance of Bank Tax for 1872	689.39
	,, Sundry persons, Interest Temporary Loan	26,240.91
	,, ,, ,, ,, Permanent Loan	137,573.04
	,, ,, ,, City Debt	281,635.68
	,, ,, ,, and institutions, Temporary Loan .	1,063,738 79
	Balance on hand	137,142.68
		$3,360,217.54

JOSEPH WHITNEY, *Treasurer.*

ACCOUNT OF CITY DEBT, DECEMBER 1, 1873.

Date.	Rate.	To whom payable.	Amount.	Total.	When payable.	Interest paid to.
April 6, 1857.	5¾	Lowell Institution for Savings	$30,000.00		April 6, 1877.	Oct. 6, 1873.
July 1, 1858.	5	Cambridge City Bonds	7,000.00		July 1, 1878.	July 1, 1873.
July 1, 1859.	5	,, ,, ,,	15,000 00		July 1, 1879.	July 1, 1873.
Aug. 1, 1862.	5	,, ,, ,,	30,000.00		Aug. 1, 1882.	Aug. 1, 1873.
Sept. 10, 1862.	5	,, ,, ,,	40,000.00		Sept. 10, 1882.	Sept. 10, 1873.
Sept. 10, 1862.	5	,, ,, ,,	30,000.00		Sept. 10, 1877.	Sept 10, 1873.
Nov. 20, 1862.	5	,, ,, ,,	14,000 00		Nov. 20, 1882.	Nov. 20, 1873.
Mar. 5, 1863.	5	,, ,, ,,	150,000.00		Jan. 1, 1893.	July 1, 1873.
April 1, 1864.	5	,, ,, ,,	100,000 00		April 1, 1889.	Oct. 1, 1873.
July 1, 1870.	6	,, ,, ,,	20,000.00		July 1, 1890.	July 1, 1873.
June 2, 1871.		Cambridge City Note	10,000 00		June 2, 1874.	June 2, 1873.
June 2, 1871.		,, ,, ,,	10,000.00		June 2, 1874.	June 2, 1873.
June 2, 1871.		,, ,, ,,	10,000.00		June 2, 1874.	June 2, 1873.
June 2, 1871.		,, ,, ,,	10,000.00		June 2, 1874.	June 2, 1873.
June 2, 1871.		,, ,, ,,	10,000.00		June 2, 1874.	June 2, 1873.
June 2, 1871.		,, ,, ,,	7,000.00		June 2, 1874.	June 2, 1873.
June 2, 1871.		,, ,, ,,	5,000.00		June 2, 1874.	June 2, 1873.
July 1, 1871.		Cambridge City Bonds	100,000.00		July 1, 1876.	July 1, 1873.
July 1, 1871.		,, ,, ,,	100,000.00		July 1, 1881.	July 1, 1873.
July 1, 1871.		,, ,, ,,	100,000.00		July 1, 1886.	July 1, 1873.
July 1, 1872.		,, ,, ,,	15,000,00		July 1, 1882.	July 1, 1873.
Nov. 1, 1870.	8	Mary Waller	3,200.00		Nov. 1, 1875.	Nov. 1, 1873.
May 1, 1872.	10	,, ,,	800.00		May 1, 1875.	Nov. 1, 1873.
Oct. 10, 1872.	7	Cambridge City Note	5,000.00		Jan. 10, 1873.	Oct. 10, 1873.
Oct. 10, 1872.	7	,, ,, ,,	5,000 00		Jan. 10, 1873.	Oct. 10, 1873.
Oct. 10, 1872.	7	,, ,, ,,	5,000.00		Jan. 10, 1873.	Oct. 10, 1873.
Oct. 10, 1872.	7	,, ,, ,,	5,000.00		Jan. 10, 1873.	Oct. 10, 1873.
Oct. 10, 1872.	7	,, ,, ,,	5,000 00		Jan. 10, 1873.	Oct. 10, 1873.
Oct. 10, 1872.	7	,, ,, ,,	5.000.00		Jan. 10, 1873.	Oct. 10, 1873.
Oct. 6, 1873.	8	,, ,, ,,	15,000.00		Oct. 6, 1874.	
Oct. 3, 1873.	8	,, ,, ,,	9,800.00		Oct. 3, 1874.	
Oct. 7, 1873.	8	,, ,, ,,	10,000.00		Oct. 7, 1874.	
Oct. 7, 1873.	8	,, ,, ,,	10,000.00		Oct. 7, 1874.	
Oct. 7, 1873.	8	,, ,, ,,	10,000.00		Oct. 7, 1874.	
Oct. 7, 1873.	8	,, ,, ,,	10,000.00		Oct. 7, 1874.	
Oct. 7, 1873.	8	,, ,, ,,	10,000 00		Oct. 7, 1874.	
Oct. 7, 1873.	7	,, ,, ,,	50,000.00		Oct. 7, 1874.	
Oct. 8, 1873.	8	,, ,, ,,	2,000.00		Oct. 8, 1874.	
Nov. 10, 1873.	8	,, ,, ,,	6,000.00		Nov. 10, 1874.	
Nov. 11, 1873.	8¼	,, ,, ,,	7,500.00		Nov. 11, 1874.	
Nov. 11, 1873.	8¼	,, ,, ,,	2,500.00		Nov. 11, 1874.	
Nov. 11, 1873.	8¼	,, ,, ,,	7,000.00		Nov. 11, 1874.	

Nov. 12, 1873.	8					Nov. 12, 1874.	
Nov. 12, 1873.	7½			12,000.00		May 12, 1874.	
Nov. 12, 1873.	7			5,000.00		May 12, 1874.	
Nov. 12, 1873.	8			5,000.00		May 12, 1874.	
Nov. 14, 1873.	8			20,000.00		Nov. 14, 1875.	
Nov. 14, 1873.	8			10,000.00		Nov. 14, 1874.	
Nov. 15, 1873.	8			10,000.00		Nov. 15, 1874.	
Nov. 15, 1873.	8			10,000.00		Nov. 15, 1874.	
Nov. 17, 1873.	8			5,000 00		Nov. 17, 1874.	
Nov. 17, 1873.	8			5,000.00		Nov. 17, 1874.	
Nov 21, 1873.	8			5,000.00		Nov. 21, 1874.	
					1,103,800.00		
July 1, 1856.	6	Water Loan: Cambridge City Bonds		50,000.00		July 1, 1881.	July 1, 1873.
May 1, 1865.	6			186,400 00		May 1, 1875.	Nov. 1, 1873.
Aug. 1, 1865.	6			55,000.00		Aug. 1, 1883.	Aug. 1, 1873.
July 2, 1866.	6			100,000.00		July 2, 1886.	July 2, 1873.
April 1, 1867.	6			150,000.00		April 1, 1888.	Oct. 1, 1873.
April 1, 1868.	6			175,000.00		April 1, 1888.	Oct. 1, 1873.
May 1, 1869.	6			112,000.00		May 1, 1889.	Nov. 1, 1873.
July 1, 1870.	6			60,000.00		July 1, 1890.	July 1, 1873.
May 1, 1871.	6			50,000.00		May 1, 1891.	Nov. 1, 1873.
Mar. 20, 1873.	6			335,000 00		July 1, 1892.	July 1, 1873.
					1,273,400 00		
Mar. 20, 1873.	6	Funding Loan: Cambridge City Bonds		212,000 00			
					212,000.00	April 1, 1883.	
Mar. 20, 1873.	6	Paving Loan: Cambridge City Bonds		100,000.00			
					100,000.00	July 1, 1893.	
July 1, 1873.	6	Sewer Loan: Cambridge City Bonds		136,000.00			
					136,000.00	July 1, 1903.	
July 1, 1873.	6	Street Widening Loan: Cambridge City Bonds		10,000.00			
					10,000.00	July 1, 1903.	
July 1, 1873.	6	Street Loan: Cambridge City Bonds		13,000.00			
					13,000.00	July 1, 1893.	
July 1, 1873.	6	Land Loan: Cambridge City Bonds		10,000.00			
					10,000.00	July 1, 1893.	
July 1, 1873.	6	Building Loan: Cambridge City Bonds		37,000.00			
					37,000.00	July 1, 1883.	
July 1, 1873.	6	Low Land Loan: Cambridge City Bonds		103,000 00			
					103,000,00	July 1, 1883.	
Oct. 1, 1863.		Trustees Daniel White Charity		5,000.00			Oct. 1, 1873.
June 1, 1858.		Trustees Dowse Institute Fund		10,000.00			June 1, 1873.
Oct. 8, 1864.		Trustees Sanders Temperance Fund		10,000 00			Oct. 8, 1873.
					25,000 00		
		State Tax		65,902 50		Dec. 1, 1873.	
		County Tax		37,554.41		Dec. 31, 1873.	
					103,456.91		
					$3,126,656 91		

RECAPITULATION OF EXPENDITURES FOR THE FINANCIAL YEAR ENDING NOV. 30, 1873.

	Original Appropriations.	Added subsequently.	Subtracted subsequently.	Appropriations as altered.	Amount of Expenditures.	Balances Unexpended.
Instruction in Public Schools	$140,000.00	$2,700.40		$142,700.40	$142,700.40	
Scientific Department of High School	100.00			100.00	9.78	$90.22
Text-Books for High School	100.00			100.00		100.00
Evening Schools for Adults	3,000 00			3,000.00	2,053.08	946.92
Hopkins Fund	800.00		$800.00			
Compensation of Secretary of School Committee	300.00			300 00	300.00	
Care and Repairs of School-houses	40,000.00	5,750.38		45,750.38	45,750.38	
Ward Room, Police Station, and Engine-house, Ward Four	85,000 00			85,000 00	38.509.72	46,490.28
New School-houses and Alterations	55,000.00			55,000.00	28,337.50	26,662.50
Almshouse and Stone Ledge	55,000.00	9,126.65		64,126.65	64,051.65	75.00
Police and Watch	64,000.00			64,000 00	62,067.59	1,932.41
Fire Department	55,000.00	4,452.55		59,452.55	59,452.55	
Widening Streets	5,000.00	7,387 33		12,387.33	12,387.33	
Streets and Paving	182,000.00			182,000 00	181,998.57	1.43
Sewers and Drains	60,000.00	630 75		60,630.75	55,630.75	5,000.00
Care and Repairs of Bridges	10,000.00			10,000.00	9,547.52	452.48
Care and Maintenance of West Boston and Craigie's Bridges	87,000.00		52,356.37	34,643 63	8,023 42	26,620.21
Lighting Streets	24,000.00			24,000.00	17,075.31	6,924 69
Watering Streets	10,000.00	12,038 33		22,038.33	22,038 33	
Salaries of City Officers	20,000 00			20,000.00	19,900.00	100.00
Cemeteries	12,000.00	3,368.61		15,368.61	15 368.61	
Public Squares	2,500.00	73 44		2,573 44	2,573.44	
City Engineering	7,000.00		549 17	6,450.83	6,307 36	143.47
Interest and Bank Discounts	145.000.00	18,813 95		163,813 95	163,813.95	
Dana Library	4,000.00			4,000.00	3,944 69	55.31
Volunteers and their Families	21.000.00			21.000.00	20,000.00	1,000.00
Care and Repairs of Water Works	25.000.00	3,002.09		28,002.09	28,002.09	
Supply Account of Water Works	18,000.00	388.42		18,388.42	18,388.42	
Extension of Water Works	250,000.00		17,827.04	232,172.96	219,030.21	13,142 75
Sinking Fund of Water Works	30,000.00	17,827.04		47,827.04	47,827 04	
Incidental Expenses	60.000.00	6,556 64		66,556.64	66,556.64	
Payment of City Debt	311,635.68		30,000.00	281,635 68	281,635.68	
Sinking Funds	50,900.00	11,735.22		62,635.22	62,635.22	
Washington Street Improvement	248,000.00			248,000.00	215,298.76	32,701 24
Sewer at Fresh Pond	30,000.00	2,346.89		32,346.89	32,346.89	
Police Court Room, &c., Ward One	20,000.00			20,000 00	20,000 00	
Street through Land of Livermore		13,333.89		13,333 89	13,333.89	
Sewer in Dublin Street		50,000.00		50,000.00	23,894.24	26,105.76
Land in Tremont Street		11,000.00		11,000.00	10,560.00	440.00
Filling Low Lands		100,000 00		100,000 00	44,507.26	55,492.74
Amount of Appropriations	$2,131,335.68			$2,310,335.68	$2,065,858.27	$244,477.41
Amount of Expenditures				2,065,858 27		
Balances unexpended				$244,477.41		

The appropriation for Hopkins Fund was transferred to Instruction in Public Schools. The creation of a City Debt of $179,000 was authorized for certain appropriations subsequent to the annual appropriations, namely, Widening Streets, $5,000; Sewer in Dublin Street, $50,000; Street through Land of Livermore, $13,000; Land in Tremont Street, $11,000; Filling Low Lands, $100,000.

REPORT

OF THE

TRUSTEES OF THE SINKING FUND OF THE CAMBRIDGE WATER WORKS.

The undersigned, Trustees of the Sinking Fund of the Cambridge Water Works, respectfully submit the following Report: —

Amount of Fund, June 30, 1872		$129,348.17
Received of Registrar for rates, supplies, &c., for the year . . .	$149,601.69	
Less amount paid for care, repairs, &c. . .	$45,470.65	
Interest on Water Bonds	56,304.00	
	101,774.65	
		47,827.04
Interest on sundry temporary loans to the City . .		2,195.62
Interest on Fund		8,314.83
		$187,685.66
Accrued interest on Bonds to June 30, 1873 . .		1,724.50
Actual value of Fund, to June 30, 1873 . . .		$189,410.16

The Fund is invested as follows: —

Cambridge Water Bonds	$186,823.00	
Temporary Loan to the City . . .	862.66	
		$187,685,66

ISAAC BRADFORD,
F. H. WHITMAN,
JOS. WHITNEY,
Trustees of the Sinking Fund of the Water Works.

CAMBRIDGE, *Dec.* 1, 1873.

REPORT

OF THE

COMMITTEE ON SOLDIERS AND THEIR FAMILIES.

The Joint Committee on Soldiers and their Families submits to the City Council its Report for the year ending Nov. 30, 1873.

The whole number of cases in which aid has been granted during the year has been 294. The number now on the list is 275.

The appropriation for Volunteers and their families was	$21,000.00
The amount paid from said appropriation to Nov. 30, as appears by the books of the Auditor, was	$20,000.00

The payments of State Aid, as returned to the Auditor of the Commonwealth, are for the year ending Dec. 31, 1873, and amount to $20,478.50, of which sum $19,897.50 will be reimbursed to the City by the State.

The monthly payments now amount to about $1,700, and an appropriation of $21,000 will be sufficient for the ensuing year.

All which is respectfully submitted.

EDWARD KENDALL,
ROBT. L. SAWIN,
A. P. CLARKE,
JOHN McSORLEY,
FRANK CORCORAN,
F. IVERS,
JAMES C. DAVIS,

Committee on Soldiers and their Families.

Cambridge, *Dec.* 31, 1873.

REPORT

OF THE

COMMISSIONERS OF THE CAMBRIDGE CEMETERY.

To the City Council: —

The Commissioners of the Cambridge Cemetery herewith submit their Nineteenth Annual Report, for the year ending Nov. 30, 1873.

The receipts for the year have been as follows: —

Cash received for burial lots	$9,271.00	
,, ,, ,, fees	1,198.50	
,, ,, ,, care of lots . . .	2,035.43	
,, ,, ,, hay	87.00	
,, ,, ,, wood	16.00	
,, ,, ,, sedge grass . . .	15.00	
Total		$12,622.93

The expenditures for the year have been as follows: —

Superintendent's salary	$1,400.00	
Sundry workmen	11,390.16	
Other Expenses	2,578.45	
Total		$15,368.61
Excess of expenditures over receipts .		$2,745.68

Total appropriation for the year . . .	$15,368.61
,, expenditure	15,368.61

The number of lots prepared and ready for sale Dec. 1, 1873, was 193, — being 172 more than the previous year. The number of lots sold, 94, — being 18 more than in 1872. Whole number of interments in 1873, 473, — a decrease from previous year of 88. Whole number of interments in the cemetery, 7,883.

The excess of expenditures over receipts this year is attributable to the large amount of grading that it has been found necessary to have done; but, in the great number of prepared lots remaining over for sale, there is believed to exist a full equivalent for this balance.

A portion of the expense incurred was in consequence of laying out a new public lot, rendered imperative from exhaustion of room in the older one; and in so doing the reserve ground of the Cemetery has been largely drawn upon.

It will not be many years before an additional purchase will have to be made; and already the Commissioners have entertained the proposition of looking for land out of town, that in the immediate neighborhood being holden at too high a rate to warrant its obtainment.

There has further been laid out and graded a new Soldier's Lot of handsome proportions, which, when fully completed, will not merely furnish a last resting-place for the remains of our heroes, but will present an attractiveness adding largely to the beauties of the surrounding enclosures.

In conclusion, appreciative recognition is due the Superintendent for unremitting attention to the duties of his office, and for the good taste so happily displayed in making the Cemetery one of choicest selection.

ISAAC BRADFORD,
JOHN M. TYLER,
GEO. T. GALE,
WILLIAM PAGE,
CURTIS DAVIS,
GEO. S. SAUNDERS,
} *Commissioners of Cambridge Cemetery.*

CAMBRIDGE, *Dec.* 1, 1873.

REPORT

OF THE

BOARD OF OVERSEERS OF THE POOR.

The Overseers of the Poor respectfully submit their Annual Report to the City Council for the fiscal year ending Nov. 30, 1873.

The Appropriation made by the City Council at the beginning of the year was	$55,000.00	
Additional Appropriation	9,126.65	
		$64,126.65
Amount of Expenditures		64,051.65
Balance unexpended		$75.00

The Receipts have been as follows: —

From Products of the Farm	$2,425.97	
,, Sale of house offal	2,550.96	
,, Ledge, for stone	8,521.25	
,, State, cities, and towns	1,314.33	
,, Board	409.25	
,, Rent of house	50.00	
,, Sundry sources	172.50	
		$15,444.26

Amount due and uncollected: —

From Ledge, stone sold	$9,549.68	
,, Board	662.00	
,, House offal	315.75	
,, Sundry sources	50.00	
		$10,577.43

RECAPITULATION.

Total Appropriation for the year		$64,126.65
Balance unexpended	$75.00	
Receipts from all sources	15,444.26	
Amount due, as above	10,577.43	
		26,096.69
Balance		$38,029.96

From which must be deducted charges belonging to the Health Department of the City: —

Collection of house offal, expenditures in excess of receipts	$4,500.00	
Small-pox patients	6,644.85	
		11,144.85
Actual expense for the year		$26,885.11

Value of personal property in 1872	$19,000.00
,, ,, ,, 1873	21,617.00

Attention is respectfully called to the fact that the unusually large appropriation for the year was rendered necessary in consequence of the largely increased expense attending the collection of house offal, together with the extraordinary demands resulting from the presence of small-pox in the city. The first of these, the collection of house offal, though in reality a health measure, and so regarded, has devolved in continuance upon this department since the abolishment of the Piggery, owing to the lack of facilities elsewhere than at the Almshouse for the storage of wagons

and of offal while awaiting sale. This past year new teams have been procured and more men employed, in accordance with the suggestions of the Board of Health and the heightened requirements of the service. Secondly, the establishment of the Small-pox Hospital upon the Almshouse grounds, together with the care and attendance on the patients both there and throughout the city, has engaged new duties and responsibilities of a pecuniary nature, quite in excess of the ordinary annual provision for the poor. In thus briefly stating the causes that have operated to the enlargement of the appropriation, it is with the purpose of relieving the department from the charge of extravagance, which it is feared might otherwise rest in the absence of proper explanation.

The average number of inmates during the year has been 101, and the expense of maintaining the House has amounted to $11,834.09; from which it results that each pauper has cost $117.17, or $2.25 per week, a sum quite as low as the average of former years.

The house has received some needed repairs, and a much desired provision has been made for the wants of the aged and sick. Gas has been introduced, and a safety and convenience thereby secured which were unknown in the previous use of the fluid lamps. Other proposed improvements have received the attention of the City Council, particularly in relation to the separation of the children from the adults; but as yet no satisfactory plan of alteration has been determined upon, and the children continue subjected to those influences which are believed to be in a degree pernicious. With the considerable number of truants now under sentence from the Police Court, their numbers constantly augmenting, it is foreseen that the time is not very distant when some special arrangement will have to be made for their better and more secure accommodation. Until such time, however, it is believed by the Overseers that the employment of a single attendant, under whose watchful charge the boys might constantly be kept, would overcome the evil which at present forms the subject of criticism, and supply a discipline most salutary in its effect. The School continues under the instruction of that most excellent and devoted teacher, Miss Adams, and enjoys a condition that attests in a marked degree her success; whilst the Sabbath School remains

indebted to the management of Mr. Patch, whose kindly efforts leave their recognized impress.

In conclusion, a word of commendation is due to both the Warden and Matron, and to their assistants by whom they have been so fully seconded, for the praiseworthy care that is manifest in the buildings and surroundings, and for the entire fulfilment of all the just expectations of the Board.

ISAAC BRADFORD,
L. B. GUYER,
BENJ. F. WYETH,
JOS. NEWMARCH,
ALFRED L. BARBOUR,
S. M. PARSONS,

Overseers of the Poor of Cambridge.

CAMBRIDGE, *Dec.* 24, 1873.

REPORT

OF

JAMES R. MORSE, M.D.

VISITING PHYSICIAN.

To the Overseers of the Poor of the City of Cambridge :—

GENTLEMEN, — It becomes my duty at the close of the present municipal year, in accordance with the requirements of your Board, to present a Report of the duties and labors which have been mine in the care of the sick at the Public Institution, the care and welfare of which have been placed in your hands by the City of Cambridge. The duties which have devolved upon me during the first five months of the year were rendered much more arduous by the continued prevalence of the small-pox epidemic, requiring daily visits at the Hospital for Contagious Diseases. The closest attention seemed necessary in the case of those afflicted with that loathsome disease, and at the same time to guard against all communication with the Almshouse, thereby confining it to its present limits. At the time of closing my last Annual Report I had ten cases of disease in its various forms and stages under my care, and during the winter and spring months the average number at the Hospital was six. A small proportion of the cases were of a mild type, while a large majority assumed a very severe form under the most unfavorable circumstances, it being in some cases complicated with other infectious diseases of the most loathsome and poisonous character. Also, during the epidemic, there were thirteen cases of the disease assuming the hemorrhagic form, of which ten proved fatal; the loss of blood in some cases being very great.

The cases of that type which recovered were less aggravated, having but little hemorrhage except into the pustules. A highly stimulating and nutritive treatment was adopted in all cases inclining to the hemorrhagic form of the disease. The whole number under treatment at the Hospital during the epidemic was seventy-six; and four cases of varioloid, in mild form, were treated at the Almshouse, being entirely secluded from the other inmates of the Institution. The whole number therefore under treatment for small-pox in its various forms was eighty. Since the first of June last, there has been no appearance of the disease in any part of the city.

In reference to the sickness in connection with the Almshouse proper, I desire to make a very brief report, as the character of the sickness and the class of patients bear such a strong resemblance to those of other years that a full report must seem monotonous. One fact, however, ought to be referred to, which is that each year a larger proportion of the older inmates of the Institution have been received at the house while sick with some protracted disease, and have sought this as their last abiding-place previous to their entrance to the unseen world. There has been a large amount of sickness of a chronic character at the house during the year. The number upon the sick list has been uniformly large, giving the Institution more the character of a hospital than a home for the poor. It therefore becomes a question of some importance how not only the poor, but the sick, shall be cared for in a manner which will contribute most to their comfort and their welfare. There has also existed more than the usual number of cases of sickness from acute disease. During the past twelve months a large number have been sick with lung fever, and during the autumn eight cases of typhoid fever occurred, the origin of which may be traced to the malaria arising from an establishment near the Almshouse, where a large number of horses were dressed and buried or burned during the last year. No case from lung or typhoid fever has proved fatal, and the only fatal result from acute disease was one case of membranous croup. The whole number of deaths occurring at the house during the year is sixteen; the whole number of deaths from small-pox is six, every case being of the hemorrhagic type. The deaths at the

Almshouse were caused by diseases as follows: from consumption, five; from apoplexy, four; from dropsy, two; and from chronic diarrhœa, Bright's disease of the kidneys, cancer, marasmus, and membranous croup, one each. One confinement occurred at the house; and one foundling was received at the Institution, which was kindly cared for by the Matron and her assistant until removed to Tewksbury by order of the Overseers. My experience the last ten years induces me to suggest to your Board the desirableness of an apartment for lying-in purposes, more secluded from the other inmates of the house.

During the greater portion of the year I have made daily visits to the house to care for cases of protracted disease.

It affords me great pleasure to report that in all departments of the Institution the greatest harmony and good feeling exists between those that have the care of the sick and those that have been cared for; thus rendering the relations of each more pleasant and agreeable.

Also, in closing, allow me to express my gratitude for the kindly aid and sympathy so freely bestowed upon me by the Warden, the Matron, and all their assistants in the care of the house; our relations having been at all times those of mutual confidence and friendship, thus rendering my duties more agreeable by their fidelity and kindness.

I desire also again to remind you, gentlemen, of my gratitude for your personal and official kindness to me.

Respectfully submitted.

J. R. MORSE.

CAMBRIDGE, *Dec.* 24, 1873.

ANNUAL REPORT

OF THE

CHIEF ENGINEER OF THE CAMBRIDGE FIRE DEPARTMENT.

FOR THE YEAR ENDING NOV. 30, 1873.

CHIEF ENGINEER'S OFFICE, CITY HALL,
CAMBRIDGE, *Nov.* 30, 1873.

To his Honor the Mayor and the City Council of Cambridge:—

GENTLEMEN, — As directed by Section 6 of the Fire Ordinance, I herewith submit my Third Annual Report of the Steam Fire Department of Cambridge. The Report contains a full list of fires and alarms, a correct statement of insurance, a register of the several companies, and such other information as may be of general interest.

MEMBERSHIP.

The Department embraces a membership of eighty-six persons, as follows: One Chief Engineer, four Assistant Engineers, one Relief Engineer; four Steamer Companies, each consisting of an engineer, two drivers, and eleven hosemen; a Hook-and-Ladder Company of twenty-one members, one of whom acts as driver of the carriage; and three telegraph operators and repairers.

THE DEPARTMENT APPARATUS.

The apparatus operated by members of the Department consists of four steam fire-engines and one hook-and-ladder truck, and in connection therewith each steamer company is provided with a

substantial wagon, which is used for the transportation of coal to the several engines when working at fires, and is also used for the proper exercise of the horses. Two of these wagons have been purchased the present year by order of the City Council. There are also two reserve or relief steamers, old Engines Nos. Two and Three, and also three spare two-wheel horse hose-carriages.

ADDITIONAL APPARATUS AND WORKING FORCE.

In the month of July, I had the honor to address a communication to your Honorable Boards, recommending the purchase of a new double-pump engine for Steamer Company No. Two. On the twenty-fourth day of the same month, an order passed both branches of the City Council authorizing and directing the Chief Engineer to contract for and purchase a new steam fire-engine as recommended by him.

In accordance with said order, a contract was made, on behalf of the City, with the Amoskeag Manufacturing Company of Manchester, N.H., to construct an apparatus having all the modern improvements.

The engine was delivered in Cambridge on the twenty-eighth day of November; and, after a satisfactory test of its working capacity, it was accepted and immediately put in service.

The purchase of this new engine was manifestly requisite, as the old engine (whose place it has taken), built in 1863, was found to be very much out of repair, and in a condition rendering it unsafe for use.

In addition to the purchase of a new steamer, an order was also passed authorizing and instructing the Committee on Fire Department to contract for a new hook-and-ladder truck to be located at the corner of Cambridge and Portland Streets, as recommended in the Report of the Chief Engineer in 1872. This new apparatus is under construction at the Fire Apparatus Manufactory of E. B. Leverich, Brooklyn, N.Y., and will be delivered some time in December.

Two thoroughly constructed wagons have been added to the equipments during the year by order of your Honorable Boards, and have been placed in charge of Engine Companies Nos. Three

and Four. These wagons are found very useful in transporting coal from the store-houses to the steamers when employed at fires. Each company is now furnished with a fuel wagon, and the outlay has been a most judicious one.

The fact has been frequently demonstrated that our Department is altogether too small for a city so large as ours, which is steadily growing in population and wealth, and constantly adding to its manufacturing interests.

During the past five years millions of wealth have been added, and thousands of people have selected Cambridge for business and for residence; but during the time named no addition has been made to the extinguishing apparatus of the Fire Department. The same fire companies with their apparatus which performed service five years ago, with an annual total of forty-six alarms, are now required to perform a duty which has been largely increased, and where the risks are very much greater.

I would again recommend that a horse hose-carriage be placed in the new city building on Western Avenue, accommodations having been provided in the northerly portion of the building therefor. Instances may be cited where an appendage of this kind would have rendered very effective service in furnishing extra hose at fires.

In a former Report I recommended the addition of another steamer and company, and I am still convinced that one or more steamers should be put in service for the general protection. For a location for a steamer I would suggest the vicinity of Cambridge, Inman, and Hampshire Streets, either of those points being nearly equidistant from any of the extreme points of the city. Old Engine No. Two has been thoroughly repaired, and a new boiler placed upon her, making the engine as effective as it was when it came from the manufacturers ten years ago.

With a company attached to this engine, located where suggested, additional protection would be afforded the people; for this engine could be the second engine at nearly every box in the city. The principal outlay at first to put the engine in service will be the furnishing of a suitable house, and the purchase of horses, hose, and other equipments.

This expense should not deter prompt action, for the exigencies

of the hour require more extinguishing apparatus. I would therefore recommend that, when the annual appropriations are made, an item of sufficient amount be appropriated to meet the expense of this proposition.

FIRE STATIONS.

Some of the houses occupied as stations for the different apparatus are susceptible of alteration and improvement to make them better suited to the uses for which they are designed.

The house on Church Street requires better facilities in general, if it is to be continued as a fire station, which improvements, if made, would cost a large sum without a corresponding benefit, such as would naturally be expected after so great an outlay. A lot of land has been purchased upon which to erect a structure for the accommodation of the Police and Fire Departments, and it would seem to be true economy to dispose of the present property on Church Street, and to erect the proposed structure on the land already purchased.

I would respectfully suggest that, when plans are prepared for the new building, suitable apartments be set off for the accommodation not only of a steamer, but of a hook-and-ladder carriage also, which latter-named apparatus must ere long be put in commission as a very necessary appendage to the department in the large and rapidly growing district which Wards One and Five comprise.

The engine-house on Main Street will require many changes to make it both comfortable and convenient. The house is now occupied as a steamer and ladder station, but will soon be devoted to the entire use of the steamer and hose-carriage on the transfer of the ladder-truck to the new city building on Western Avenue.

I would earnestly recommend that the present house be so far remodelled as to afford conveniences for the washing and proper drying of hose, and the furnishing of separate sleeping apartments for the permanent men.

Engine-house No. Three has required considerable alteration and repairs to make it more convenient and inviting. The accommodations for washing and drying hose are excelled by but few houses of the kind in the country, the hose-tank and tower being

so arranged as to save labor and to facilitate the operations of those whose duty it is to take care of the hose for its preservation. Very necessary changes are being made in the engine-room and stable, which when completed will be quite satisfactory to all.

The engine-house in the Fifth Ward remains in a very unsatisfactory condition, and should receive your early attention. The absence of cellar, and of conveniences for washing hose, and the lack of suitable stable accommodations, make the situation any thing but pleasant to the men, and decidedly detrimental to the interests of the city. The fact is patent, to all having any knowledge of fire matters, that hose of any description should be properly washed and thoroughly dried to make it last for any considerable length of time, and be serviceable and trustworthy so far as strength to resist a high-water pressure is concerned. Facilities for the faithful performance of house duties should be afforded every fire station, and, whatever expense may be incurred in this direction, good will come of it.

The recommendations in former Reports in regard to Engine-house No. Four are hereby renewed.

It is a source of the utmost satisfaction to know that the building now erecting for use of the ladder-truck in Ward Four is rapidly approaching completion, and will soon be ready for occupancy, at which time a departure from the present cramped and unsuitable quarters will be made.

By a vote of your Honorable Boards, and approved by His Honor the Mayor, a frame structure has been erected at the corner of Cambridge and Portland Streets for use of the new ladder-truck spoken of elsewhere. This building, designed more particularly for immediate occupancy, and which boasts of very little ornamentation, will answer the purposes for which it is intended, until a time when it will be necessary for it to give place to a structure of greater pretensions and more enlarged accommodations.

Before leaving this topic of the Report, I may be allowed to express the hope that the recommendations suggested may meet your early consideration and approval.

THE APPARATUS AND EQUIPMENTS.

The several fire apparatus and equipments have been put to very severe tests during the year, owing to the frequency of fires and alarms, and it has been found necessary to make very extensive repairs, requiring a large outlay therefor. The apparatus is now in good condition, and it is true economy to keep it so, to the end that it may always prove itself trustworthy when its service is required.

Engine One has received a new boiler, and been otherwise repaired at the Amoskeag Manufacturing Company's Works, Manchester, N.H., at an expense of $1,800. Engine Two, by authority from the Committee on Fire Department, has also received a new boiler from the boiler works of the Campbell Brothers of this city, and has also been thoroughly refitted and put in excellent condition at the machine-shop of Morrill & Hooker, Main Street. In the case of each of these engines, it was found to be absolutely necessary that new boilers should be procured, for the long service of the originals had impaired their usefulness and safety. As a matter of economy, a large saving to the City has been secured in having these engines thoroughly overhauled, for it is safe to predict that many years of service may be expected of them.

Engine Four has also received the attention of the skilled mechanics of our city, and has been placed in a condition which will insure satisfactory service when called for.

Hose-carriage No. Two has been remodelled, and it is now thought that further repairs to any great extent will not be required.

Under authority of your Honorable Boards, three thousand feet of "Boyd's Standard Leather Hose" have been added to the equipments of the Department during the present year, at a cost of $4,860. Much of the hose in the Department, owing to its long service, has required extensive repairs after its use at fires of many hours' duration; and it is my conviction that it would be economy to displace it by substituting a warranted and more serviceable article, something which may be deemed secure when

its employment may save thousands of dollars of property from destruction.

Another very important equipment which performs an essential part, and without which our steamers would amount to but little, is the English cannel coal. To this agent we are wholly indebted for the power it furnishes our steamers. The several fires in the city the present year, which have required hours of service from the engines, have demanded the use of tons of this expensive coal, and have required the purchase of more than forty tons of it, at an average price of about $25 per ton. About twenty tons of this purchase are now on hand, and stored at points in the city easy of access in case of a large fire. It has been considered prudent always to keep a full supply of this coal on hand in case of emergency. Experiments have been made during the year with other coals, but none have been found so effective in the production of steam as has this costly article of fuel, which in the absence of any other must continue to be used.

FIRES AND ALARMS.

With the growth of the city, and the constantly increasing manufacturing interests, the dangers from fire have been largely augmented and the number of fires and alarms increased. The "fire year," so called, commencing on the first day of December, 1872, and ending on the thirtieth day of November, 1873, has been a fruitful one so far as alarms have been concerned, and the Department has been commendably prompt in its responses to them. The first loss of any magnitude, at the beginning of the year, occurred on the evening of January 5, in the extensive organ manufactory of Messrs. George Woods & Co., 624 Main Street. The fire, which caused a damage of less than $800 to the building, was more destructive to the large stock of seasoned lumber and manufactured goods which the firm had on hand.

Connected with the building in which the fire originated were two other structures, with covered bridges leading from one building to the other; and through these passage-ways the heated clouds of smoke from the burning walnut and other woods rolled in dense volumes, permeating every apartment in the several buildings, and causing a damage by this agent alone of thousands of dollars. The

whole loss by this fire is estimated at $24,000, with an insurance of $21,000.

The next fire of consequence was that on the premises of W. A. Ward & Co., carriage repository, 244 Main Street, on February 13. The building in which the fire originated was set on piles over the river, and was well on fire before the alarm was given, a strong south-westerly wind accelerating the element in its work of destruction. The firm sustained a loss of $8,400, which was fully covered by insurance.

Following the latter-named fire, the next of consequence was that in the range of dwellings on Cogswell Avenue, owned by Mr. Benjamin Rogers, and occupied by several families. This fire caused a loss of $9,400, which was fully insured.

A fire in the large pottery of Messrs. A. H. Hews & Co., Raymond Street, on the night of August 20, caused a loss of about $8,000, principally on stock.

Messrs. Holt & Bugbee sustained a loss of seasoned lumber in their dry-house on East Street, amounting to $4,000, on the afternoon of September 29; and on the following morning a fire destroyed property to the value of $5,000 on the premises of the Dover Stamping Co., Pleasant Street.

On the night of October 9, two destructive fires occurred, the first at the box factory of George G. Page & Co., Hampshire Street, where a loss of $35,000 was entailed. The second fire was on the premises of Whittemore & Hale, Davis Street, which involved a loss of $4,000.

The most destructive fire of the year, and where no insurance existed, occurred on the bridge of the Eastern Railroad Corporation over Charles River. At this fire, which commenced in a building used for housing passenger cars, great havoc was made, and a loss of at least $50,000 was the consequence. Owing to the open work of the bridge, the firemen labored under many disadvantages in their efforts to check the flames.

A fire which proved quite serious, and which involved a loss of $5,300, occurred on November 13, in the extensive coal-shed of the Cambridge Gas-Light Company, on Third Street. Several hundred tons of coal were ruined by a fire having a spontaneous origin.

On the morning of November 26, the large hotel building on Cedar Street was damaged to the extent of about $20,000, by a fire which had made very rapid progress before discovery.

The whole loss by fire for the year ending November 30 amounts to $204,609.91, and the insurance $112,138.75, showing a net loss over insurance of $92,471.16. The losses for the year aggregate more than for any year since 1869, when the gross loss was $264,423, and the net loss $124,950.

INJURIES SUSTAINED AT FIRES.

It is a source of much satisfaction to report that very few accidents have befallen firemen or citizens in going to or working at fires, and those which have occurred have not been of a serious character.

Mr. J. R. Hobbs, acting driver of the hook-and-ladder truck, was thrown from the carriage while responding to an alarm of fire from box 25, on the evening of April 16. His presence of mind in seizing hold of the guy ropes saved him from possible death. He escaped with severe sprains and bruises.

Messrs. William P. Cutler and Nathaniel W. Bunker of Engine Four received painful injuries at the fire in Hews's Pottery, on the night of August 20. Assistant foreman Emerson of the Truck Company was also hurt at the same fire by falling through a hatchway. George McKie, employed in the Pottery, also fell through a hatchway, and broke two of his ribs.

Messrs. M. G. Collins, assistant foreman, and William F. Newman, hoseman, of Engine Three, were somewhat injured by falling from a ladder at the fire on East Street, on September 29. Mr. Charles H. Dutton, a member of the Boston Fire Department, was severely hurt at the Eastern Railroad fire on October 14. During the same fire other firemen fell through the bridge-openings into the water. A slight accident befell Mr. George R. Oliver, a member of the Truck Company, at the fire on Cedar Street, on the night of November 26.

INCREASED COMPENSATION.

Upon petition of the hosemen and laddermen connected with the Department asking for an increase of compensation, the City

Council adopted an ordinance by an unanimous vote, making the annual compensation of the petitioners $200 in lieu of $100, or at the aggregate rate of $6,400 per annum instead of $3,200, as previously paid. The City Council also provided by ordinance that the salary of the Chief Engineer should be $1,200 per annum instead of $800, and that the Assistant Engineers should receive the annual salary of $400 each, an increase of $150 each over amount formerly paid. The additional compensation, as fixed by ordinances cited, makes an annual addition of $4,200, nearly all of which amount has been charged to the appropriation for the Fire Department for the present year, and which closes on this date.

The liberal action of the City Council and His Honor the Mayor, in making the compensation of the firemen larger than it was, is fully appreciated by every member thereof.

ADMISSIONS AND DISCHARGES.

The following named persons have been admitted to and discharged from the Fire Department, at their own request, during the year: —

	Admitted.	Discharged.
Engine Co. No. 1	Maurice F. Magraw.	James E. Brennan.
,, ,, ,,	Thomas W. Jones.	John L. Jones, Jr.
,, ,, ,,	David J. Campbell.	John Kinnear.
,, ,, ,,	Hugh T. Barker.	James E. Brennan.
,, ,, ,,	James E. Brennan.	David J. Campbell.
,, ,, ,,	John Byron.	Daniel S. Mitchell.
,, ,, ,,	John L. Jones, Jr.	Jacob A. Holt.
Engine Co. No. 2	Edward Brady.	Richard F. Tobin.
,, ,, ,,	Benjamin D. Foss.	Jesse W. Haley.
,, ,, ,,		William Nickelson.
Engine Co. No. 3	Francis P. Carr.	George W. Butler.
Engine Co. No. 4	John H. Cannon.	George A. Rolfe.
,, ,, ,,	John L. Sproul.	Richard Dignan (deceased).
,, ,, ,,	James H. Presby.	William P. Cutler.
H. & L. Co. No. 1	John H. Brown.	Daniel G. Hill.
,, ,, ,,	William Parks.	John W. Downing (dec.).
,, ,, ,,	Romanzo O. Stockbridge.	
,, ,, ,,	Orville Van Duzee.	
,, ,, ,,	Daniel E. Owen.	
,, ,, ,,	William H. Lydston.	

PROTECTION AGAINST FIRE.

This subject has perhaps engrossed the attention of the people since the Chicago and Boston conflagrations to a greater extent than ever before. It is a question which should be carefully considered, and for a solution of which every means should be employed. Quite recently those interested in insurance matters met in convention with the heads of Fire Departments for the purpose of discussing the best method of preventing and extinguishing fires. Important views were expressed by experienced persons, and an address to municipal authorities was authorized to be prepared for distribution to every town and city government, and to all Fire Departments in the country.

Serious fires are occurring every day, and in some cases their origin is traced to spontaneous combustion; while other cases are reported where defective chimneys and hearths are reported as being the cause.

The disposition to defraud insurance companies has led reckless individuals to burn their property, and many fires have been known to originate in this manner.

High rates of insurance effected on property having but a nominal value is a great temptation, and the courts have dealt with persons who have taken advantage of it.

Another cause of fire, principally occurring in dwelling-houses, is owing to the careless and indifferent manner in which heating apparatus is put up. The subject is one of great import, and cannot be discussed at length in this Report; but I would call your attention to former Reports wherein this matter of preventing fires is alluded to.

Early in the year an ordinance intended to regulate the construction of buildings, with a view of better subserving the public interests, was presented for adoption, and after a very thorough discussion and amendment it was laid on the table in one branch of the City Council. Pending the adoption of the ordinance, the very class of buildings which it was designed to regulate have been erected in different parts of the city, thus increasing the liabilities. The opinion of the Chief Engineer, given as it has been in former Reports, that restrictions should be placed upon builders, is

unchanged; and he believes that the authorities owe it to themselves and to the people to prohibit the erection of tenement houses, workshops, and other buildings having no safeguards against fire, and with imperfect means of escape for the inmates should a fire occur.

He earnestly trusts that your Honorable Boards will, without delay, forward the passage of an ordinance which will serve to control the erection of buildings, and which will tend to prevent fire.

FIRE-ALARM TELEGRAPH.

The fire alarm has worked admirably during the year, and it is now in thorough working order. The system in use is wholly automatic, and is therefore unerring when occasion is presented for its employment.

In no year since this method of giving alarms was introduced has the telegraph been so frequently used, and it has not failed to give the firemen and citizens correct information of the locality of a fire.

On one occasion two distinct boxes were simultaneously pulled for the same fire; and notwithstanding that some little confusion ensued, yet the firemen found the fire in season to prevent a very extensive conflagration. In the month of April, considerable damage was done to the wires, poles, and brackets, and chimney attachments, by a heavy storm of snow and sleet. The same trouble befell the various despatch lines in this vicinity.

By vote of the City Council, four new boxes, Nos. 15, 16, 17, and 73, have been added to those previously located, making the number now in service forty-four. That more boxes are required is evidenced by the fact that many localities are exposed, and without these safeguards, which should be placed at convenient distances from each other all over the city.

The people who are assessed for the general-expenditures of the city demand that their property be protected, and it would seem that all localities should receive the same privileges and benefits accorded other localities.

I would therefore recommend that additional boxes be purchased and put up in any neighborhoods where it may appear

absolutely requisite they should be placed. In a former Report it was recommended that a bell and striker be located on one of the school-houses in the centre of the Fourth Ward, which has never been furnished with a striker, as have the other wards.

The recommendation then made is herewith renewed, as the citizens of that ward are urgent in the wish for a bell and striker.

With the introduction of new boxes, additional battery cups are required to be placed in the battery room, so that at present there are 240 cups in use against 130 cups when the telegraph system was first introduced into this city. With all new boxes or other magnetic attachments, extra cups require to be added in order to maintain the battery power for effective service.

The lines of wire stretching out from the battery station to all parts of the city now measure a length of forty-four miles, and it is presumably certain that at least several miles in addition will be required to be added during the year 1874. The valuable auxiliary service which the telegraph has performed is beyond computation, for by its rapid transmission of alarms a large amount of property has been saved, and the city secured against a sweeping conflagration. The Department owes much of its efficiency to this valuable and trusty messenger, whose summons it answers with an alacrity which has won for it the expression of favor from the citizens.

FIRE HYDRANTS.

Through the cordial co-operation of the Water Board and S. W. Dudley, Esq., the untiring Superintendent of the Water Works, sixty-six fire hydrants have been set in various parts of the city during the year. Of this number, thirty-three were of the old flush pattern, and thirty-three of the post or plug style, which stand about two feet high and have two outlets for the discharge of water. Of this style of hydrant too much cannot be said, for by their elevation above the sidewalk no difficulty is experienced by the firemen in finding them, in case of fire, on the darkest night or after a heavy fall of snow. Unlike the old style of flush hydrants, many of which are now located, the post hydrant will furnish water to two engines at the same time, and does not require packing with

hay to keep them from freezing, nor do they require to be cleared of snow as is the case with the flush hydrant. Besides affording very excellent water facilities, the post hydrant is more economical in every way, and the Water Board gives assurances of its intention to place none but hydrants of this style on all new water mains in the future. The "Lowery Hydrant" has its advocates; but it is stated upon good authority that much valuable time is lost in endeavors to find them after a light fall of snow or even on a dark night. The only advantage they may have over other hydrants may be reduced to the fact that the water supply comes through a stand-pipe direct from the street main, hence there is less friction and loss as compared with the method of supplying the hydrants set on the edge of the sidewalk. Even with this consideration in favor of the "Lowery Hydrant," I believe our system of post hydrants far preferable, and it would be an unwise policy to introduce others for use in this city, unless something far superior should be brought to notice. With fire hydrants two and three hundred feet apart, the safety of property is better secured against fire, for the apparatus can be massed at given points and better execution accomplished.

The very severe winter of 1872–3 required very close attention to the flush hydrants to keep them clear of snow and their covers well salted. Hundreds of dollars were thus expended for labor which could have been saved had the post hydrant been introduced at an earlier day.

The present number of hydrants in the city is 411, of which number Ward One has 92; Ward Two, 107; Ward Three, 60; Ward Four, 75; and Ward Five, 77.

HORSES OF THE DEPARTMENT.

At present there are sixteen horses employed in this Department, the number having been increased by the purchase of a new pair for Engine Three. One of the horses formerly connected with this engine is now used on Hose-Carriage No. Three, and the other horse is employed in the telegraph department. One of the horses attached to Engine One is unfitted for further fire service,

owing to the foot rot, which has left the new hoof very tender and sensitive; and it will be necessary to procure a new pair for this engine as soon as possible.

The other horses in the Department are in generally good condition, and receive the best of care and attention from their experienced and faithful drivers.

PERMANENT EMPLOYMENT.

In many cities in the United States, the system of employing the members of the fire companies permanently has worked admirably, and the efficiency secured thereby has more than compensated for the extra expense incurred. Under that system the numerical force of the Department is lessened, for the reason that full companies are always on hand at the fire stations to respond when an alarm of fire comes in, the apparatus being so arranged as to allow every member an opportunity of riding to the fire.

That the system alluded to is far superior to ours will be made fully demonstrable upon investigation by those who may not have acquainted themselves with the advantages and disadvantages of the two systems.

The brigade system of Fire Departments is dated back for many years in England, France, and Germany, but its introduction into this country is of quite recent date.

When the steam fire-engine was made to take the place of the manual or hand-engine, it was found necessary that an engineer should be placed in charge of it, and it was arranged that he should sleep at the fire station, and devote his whole time, the better to answer all calls for his services and those of the apparatus in his charge.

The same was also required of the driver of the engine and the driver of the hose-carriage. These men, therefore, were permanently employed by the month, as is now the case; but the company members, or "Minute Men," were not so employed, but were paid a small annual compensation to perform duty only when the alarm should be given, they to reach the fire in the quickest and best possible manner.

This system has proved itself less efficient in every particular in

comparison with the system which requires the whole company to be in and about the fire station at all times. For illustration it may be said that the companies organized under the system now in force in this city are composed of mechanics, faithful and deserving men, whose services are due to their employers wherever the performance of duty is required of them, whether it may be within the city limits or in the neighboring towns. Thus it becomes clear to every person that, while those men are working ten or twelve hours a day out of town, the Department is weakened, and its efficiency impaired. Why, then, are such men employed, may be asked. Because none others capable of enduring the fatigues and exposures incident to the life of a fireman can be procured.

Druggists' clerks, attachés of dry-goods houses, or men of that sort, are, as a general thing, unsuitable persons to be employed in fire departments, by reason of a lack of strength and robustness, so very essential in an employment requiring the performance of duty in all weathers. It is a fact also that, where the permanent employment of full companies has been adopted, a less number of men is required ; for with eight or ten members in the station, when an alarm comes in, the apparatus is easily operated on its arrival at the fire, the men having ridden thereto, and being fresh and vigorous. As the duty is now performed in this city, the engine starts away from the station with the driver, engineer, and perhaps a member or two, who, upon reaching the fire, find themselves for a time unable to perform the duty satisfactorily.

As the time passes, other members not at work out of town come along one after the other, and all more or less fatigued and short of breath, after the long run or "stern chase" to overtake the steamer. Now to say that these men are in a condition to lug hose up steep ladders, or to penetrate thick and stifling smoke, is to say what is not true. Look at the case on the other hand, where *all* the men ride to the fire from the station, and it will be seen that they enter upon the work with a dash and a vigor which mean that they are to be masters, and not the fire.

Believing that the Department can be very much improved by adopting the system of permanently employing the members, the present force to be reduced, leads me most respectfully to ask your

consideration of the question, whether a change shall be made which will place the Department on a better footing in every way?

STEAM HEATERS.

It has frequently occurred, upon the breaking out of a fire near an engine station, that the steamer has been delayed in the performance of service, owing to the absence of sufficient steam. This delay in getting the steamer to work is due to the fact that the short distance traversed from the station to the fire lessens the time generally required to generate steam. To obviate this difficulty, which might prove a very serious one, a very ingenious appliance has been invented, and is now in use in several Departments, by which the water in the boiler of the steamer may be kept up to a temperature indicating ten, twenty, or thirty pounds of steam, thus keeping the steamer in condition at all times to perform effective service at the shortest notice.

The appliance mentioned is placed in the cellar under the engine, and is attached to the boiler by means of pipes through which the steam from the heating apparatus passes directly into the boiler, and keeps the water therein at any degree of heat desired. These pipes are so arranged in the connection with the boiler that when the engine leaves the house they become detached, and by the closing of an automatic valve or cut-off the steam from the heater below is immediately shut off and prevented from escaping, while the furnace door of the heater is thrown open to deaden the fire.

Of the practicability of these heaters I have not the least doubt, as they have satisfactorily proved their usefulness. That our engines should be provided with this valuable auxiliary, there can be no question, for all appliances or equipments which will aid in the extinguishment of fires should be procured, however much some may cavil and find fault.

The extinguishment of fires has now become a business, and has ceased to be a pastime, and greater facilities for making the business a successful one should be unhesitatingly provided.

APPROPRIATION AND EXPENDITURES.

The amount appropriated at the beginning of the year for this Department was $55,000, all of which sum has been expended; and an additional appropriation of $4,452.55 was made at the close of the year to meet the payment of outstanding bills. The expenditures for the year were augmented by the purchase of a large quantity of hose and other equipments, and by the increase of pay of members.

The total expenditures for the Department from Dec. 1, 1872, to Nov. 30, 1873, have been $59,452.55. The principal items of expenditure for the Department are as follows: —

Services of members	$31,625.19
Hay, grain, and straw	2,683.01
Repairs and materials	4,604.48
Hose and repairs	5,635.24
Hard and soft coal	1,459.90
Fire-alarm, new boxes, &c.	2,896.33
New hook-and-ladder house	1,400.00
Fuel-wagons	700.00
Other expenses	8,448.40
	$59,452.55
Appropriation	$55,000.00
Additional appropriation	4,452.55
	$59,452.55
Amount of expenses	59,452.55

MONTHLY STATEMENT OF ALARMS.

Date.	Time.	Box.	Location.	Remarks.
1872.				
Dec. 14	4.30 A.M.	26	Main Street.	Supposed spontaneous combustion.
„ 15	6.10 P.M.	8	Third Street.	Burning of meat on stove.
„ 17	4.35 P.M.	54	Nichols Court.	Burning of bed.
„ 26	9.50 P.M.	59	Harvard Square.	Supposed incendiary.
„ 27	4.00 A.M.	Still.	Spruce Street.	Overheated brick-kiln.

Whole number of fires and alarms 5
Number of alarms corresponding month, 1871 . . . 5

MONTHLY STATEMENT OF ALARMS,—*continued.*

Date.	Time.	Box.	Location.	Remarks.
1873.				
Jan. 5	9.10 P.M.	36	Main Street.	Sparks from furnace.
,, 5	9.15 P.M.	36	,, ,,	,, ,, ,,
,, 5	9.20 P.M.	36	,, ,,	,, ,, ,,
,, 7	1.30 A.M.	32	Winsor Street.	Overheated stove-pipe.
,, 10	10.30 P.M.	Still.	Cedar Street.	Explosion of chemicals.
,, 11	5.45 P.M.	6	Third Street.	Tampering with signal-box.
,, 14	11.10 P.M.	82	Belmont.	Incendiary.
,, 29	1.50 A.M.	42	Sand Street.	Overheated stove.

Whole number of fires and alarms 8
Number of alarms corresponding month, 1872 . . . 6

Feb. 7	11.40 A.M.	36	Main Street.	Exhibition of fire alarm.
,, 13	2.40 P.M.	26	,, ,,	Supposed capsizing of stove.
,, 13	2.45 P.M.	6	,, ,,	For same fire.
,, 15	8.00 P.M.	31	Cambridge St.	Accidental.
,, 15	8.08 P.M.	31	,,	Same fire.
,, 23	3.55 A.M.	13	Stevens Court.	Burning of clothing.
,, 23	9.35 P.M.	13	Somerville.	Overheated stove-pipe.
,, 27	1.12 P.M.	9	North Street.	,, ,,
,, 27	1.20 P.M.	9	,, ,,	Same fire.

Whole number of fires and alarms 9
Number of alarms corresponding month, 1872 . . . 3

Mar. 27	12.27 P.M.	36	Main Street.	Exhibition of fire alarm.
,, 28	10.30 A.M.	Still.	Holyoke Street.	Sparks from furnace.

Whole number of fires and alarms 2
Number of alarms corresponding month, 1872 . . . 6

April 9	7.40 P.M.	8	Thorndike St.	Tampering with signal-box.
,, 16	10.05 P.M.	25	Main and Front Streets.	,, ,, ,, ,,
,, 18	3.05 A.M.	69	Cogswell Avenue	Cause of fire unknown.
,, 18	4.00 A.M.	69	,, ,,	For same fire.
,, 19	1.40 A.M.	52	Crane Street.	Probably incendiary.
,, 24	11.45 A.M.	78	Concord Avenue.	Sparks from chimney.
,, 25	10.40 P.M.	27	Clark Street.	Tampering with signal-box.
,, 27	11.40 P.M.	9	Cambridge St.	Burning of mattress.

Whole number of fires and alarms 8
Number of alarms corresponding month, 1872 . . . 6

May 6	10.40 A.M.	26	Osborn Street.	Defective pipe in dry-house.
,, 29	11.15 A.M.	42	Sand Street.	Burning of shavings.
,, 30	9.30 A.M.	6	Boston.	Assistance rendered.
,, 30	9.40 A.M.	6	,,	For same fire.
,, 31	5.45 P.M.	54	Baldwin Place.	Burning of excelsior.

Whole number of fires and alarms 5
Number of alarms corresponding month, 1872 . . . 8

MONTHLY STATEMENT OF ALARMS, — *continued.*

Date.	Time.	Box.	Location.	Remarks.
1873.				
June 10	2.55 P.M.	28	Harvard Street.	Defective flue.
,, 21	3.20 P.M.	28	Main Street.	Boiling over of varnish.
,, 21	4.10 P.M.	46	Cross Street.	Excelsior set on fire.
,, 21	4.20 P.M.	8	Vine Street.	Cause of fire unknown.
,, 21	4.25 P.M.	8	,, ,,	For same fire.
,, 27	3.30 P.M.	52	Mt. Auburn St.	Children and matches.
,, 27	4.00 P.M.	52	,, ,,	Roof caught fire from sparks.

Whole number of fires and alarms 7
Number of alarms corresponding month, 1872 . . . 4

July 6	11.40 A.M.	26	School Street.	Defective chimney.
,, 12	6.30 P.M.	25	Main Street.	Burning of old rags.
,, 13	12.40 A.M.	42	Brighton.	Assistance rendered.
,, 13	8.45 P.M.	53	Beaver Street.	Shed set on fire.
,, 20	3.45 A.M.	59	Brighton.	Assistance rendered.
,, 22	11.50 P.M.	28	Hastings Street.	Cause, supposed sparks from locomotive.
,, 22	12.00 P.M.	28	,, ,,	For same fire.
,, 29	8.40 P.M.	13	Somerville.	Assistance rendered.

Whole number of fires and alarms 8
Number of alarms corresponding month, 1872 . . . 5

Aug. 1	4.35 P.M.	9	Bridge Street.	Sparks on roof.
,, 8	5.20 P.M.	59	Harvard Street.	Supposed incendiary.
,, 9	9.20 P.M.	59	,, ,,	Cause of fire unknown.
,, 10	1.40 A.M.	38	Pearl Street.	,, ,, ,,
,, 15	10.45 P.M.	2	Boston.	Assistance rendered.
,, 17	9.50 P.M.	73	Belmont.	Alarm needless.
,, 20	10.40 P.M.	69	Raymond Street.	Overheated kiln in pottery.
,, 20	11.05 P.M.	69	,, ,,	For same fire.
,, 20	11.10 P.M.	69	,, ,,	,, ,, ,,
,, 23	5.20 A.M.	32	Somerville.	Assistance rendered.
,, 30	8.00 A.M.	15	Vine Street.	Burning of bed.

Whole number of fires and alarms 11
Number of alarms corresponding month, 1872 . . . 6

Sept. 15	2.00 P.M.	79	Dinsmore Place.	Cause of fire unknown.
,, 15	3.00 P.M.	15	Vine Street.	Burning of rags in cellar.
,, 15	4.45 P.M.	8	Third Street.	Cause of fire unknown.
,, 15	4.55 P.M.	8	,, ,,	For same fire.
,, 17	1.00 P.M.	15	Vine Street.	Cause of fire unknown.
,, 21	8.45 P.M.	69	Brighton.	Alarm needless.
,, 22	5.45 A.M.	42	,,	Assistance rendered.
,, 29	4.00 P.M.	9	East Street.	Defective pipes in dry-house.
,, 29	4.05 P.M.	9	,, ,,	For same fire.
,, 29	4.10 P.M.	9	,, ,,	,, ,, ,,
,, 30	6.05 A.M.	41	Pleasant Street.	Boiling over of galvanizing kettle.
,, 30	6.10 A.M.	41	,, ,,	For same fire.

Whole number of fires and alarms 12
Number of alarms corresponding month, 1872 . . . 7

MONTHLY STATEMENT OF ALARMS, — *continued.*

Date.	Time.	Box.	Location.	Remarks.
1873.				
Oct. 7	4.00 A.M.	82	Huron Street.	Probably incendiary.
,, 9	10.20 P.M.	28	Hampshire St.	Cause of fire unknown.
,, 9	10.28 P.M.	28	,, ,,	For same fire.
,, 9	10.35 P.M.	28	,, ,,	,, ,, ,,
,, 9	11.55 P.M.	27	Davis Street.	Probably sparks from steam fire-engine.
,, 11	6.00 P.M.	Bell Alarm	Main Street.	Light from forge.
,, 14	10.20 A.M.	2	East. R.R. Bridge	Sparks from locomotive.
,, 14	10.25 A.M.	2	,, ,, ,,	For same fire.
,, 27	5.15 P.M.	52	Main Street.	Smoke from chimney.

Whole number of fires and alarms 9
Number of alarms corresponding month, 1872 . . . 1

Nov. 3	7.45 P.M.	36	Main Street.	Cause of fire unknown.
,, 6	2.05 P.M.	72	North Avenue.	Burning of clothing in closet.
,, 6	6.25 P.M.	65	Wendell Street.	Explosion of kerosene lamp.
,, 7	9.35 P.M.	8	Thorndike St.	Tampering with signal-box.
,, 12	7.10 P.M.	9	Cambridge St.	Alarm needless.
,, 13	3.30 A.M.	13	Fourth Street.	Probably steam-pipes.
,, 13	. . . .	Still.	Third Street.	Spontaneous ignition of coal at Gas House.
,, 18	7.00 P.M.	8	Thorndike St.	Cause of fire unknown.
,, 18	7.10 P.M.	8	,, ,,	For same fire.
,, 18	7.20 P.M.	8	,, ,,	,, ,, ,,
,, 26	1.45 A.M.	72	Cedar Street.	Cause of fire unknown.
,, 26	1.50 A.M.	72	,, ,,	For same fire.
,, 26	2.10 A.M.	72	,, ,,	,, ,, ,,

Whole number of fires and alarms 13
Number of alarms corresponding month, 1872 . . . 20

Total of fires and alarms 97
,, ,, ,, ,, ,, in 1871–72 77

Increase of fires and alarms in 1872–73 20

WARDS IN WHICH FIRES OCCURRED.

A table is hereto appended, showing the location of fire alarms, by wards, from Dec. 1, 1872, to Nov. 30, 1873 : —

Ward.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Totals.
1	2	1		1	2	1	2	2	2	1	2	1	17
2		2	3		1	2	2	2	1		4		17
3	1		4		2		2	1	3	7	2	7	29
4	1	4	2	1	1	2	1	3	1	3	1	1	21
5	1	1			2				4	1		4	13
Totals	5	8	9	2	8	5	7	8	11	12	9	13	97

CLASSIFICATION OF FIRES AND ALARMS.

The annexed table shows the day of the week on which fires and alarms have occurred during the year, and the number in each month, commencing Dec. 1, 1872, and ending Nov. 30, 1873: —

1872-73.	Dec.	Jan.	Feb.	Mar.	April.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Totals
Sunday . . .	1	3	2		1			4	2	1			14
Monday . . .										8	1	1	10
Tuesday . . .	1	2				1	1	3		2	3	3	16
Wednesday . .		1			2				3	1		4	11
Thursday . .	1		4	1	1	1					4	4	16
Friday . . .	1	1	1	1	3	2	2		3			1	15
Saturday . .	1	1	2		1	1	4	1	3		1		15
Totals . . .	5	8	9	2	8	5	7	8	11	12	9	13	97

HOURS AT WHICH FIRES OCCURRED.

The table presented below shows the hour at which alarms were given for fires during the year, the fractions of time not being requisite to be given: —

1872-73.	A. M.												Total A.M.	P. M.											Total P.M.	Totals.
	1	2	3	4	5	6	7	8	9	10	11	12		1	2	3	4	5	6	7	8	9	10	11	12		
December . .				2									2				1		1			1				3	5
January . .	2												2					1				3	1	1		6	8
February . .			1								1		2	2	2						2	1				7	9
March . . .										1			1												1	1	2
April . . .	1		1	1							1		4							1			2	1		4	8
May									2	1	1		4					1								1	5
June . . .															1	3	3									7	7
July			1								1	1	3						1		2			1	1	5	8
August . . .	1				1			1					3				1	1				2	2	2		8	11
September .					1	2							3	1	1	1	5				1					9	12
October . .				1						2			3					1	1				3	1		6	9
November .	2	1	1	1									5		1				1	5		1				8	13
Totals . .	6	1	4	5	2	2		1	2	4	4	1	32	3	5	4	10	4	4	6	5	8	8	6	2	65	97

DECEASE OF MEMBERS.

It becomes a painful duty to report the decease of two members of this Department, men who had won for themselves the regard of their associates for their faithfulness in the performance of duty and their quiet and unobtrusive demeanor.

Mr. John W. Downing, a member of Franklin Truck Co. No. 1, received fatal injuries from the kick of a horse which was in his charge.

The company to which he belonged, with delegations from the other fire companies, united in attending the funeral of the deceased.

Mr. Richard Dignan, connected with Daniel Webster Engine Co. No. 4, was accidentally drowned while bathing at Chelsea Beach. A companion who was in his company also met a like sad fate. Appropriate funeral obsequies over the remains of Mr. Dignan were conducted by order of the company, and were attended by representatives from the other companies of the Department.

Both men were esteemed for their many good qualities, and their deaths have caused a void in the companies with which they were connected.

CAMBRIDGE FIREMEN'S RELIEF ASSOCIATION.

This Association, composed of members of the Fire Department, was organized April 26, 1869, for the purpose of affording relief to such members as should receive injury while in the discharge of their duties or become sick from the exposures incident to such fatiguing labor. The Association has received many contributions from kind-hearted citizens, and has been enabled to render relief to its members, and also to liquidate the expenses attending the burial of members.

The Relief Fund is deposited in the Cambridgeport Savings Bank, in the name of the Association; and it has been very largely augmented by the donations of citizens and by the annual payment of assessments.

The officers of the Association are as follows: —

President. — P. H. Raymond.

Vice-President. — John P. Farmer, Jr.

Secretary. — John Kinnear.

Treasurer. — William B. Cade.

Trustees.—P. H. Raymond, John Kinnear, George Cooley, William B. Cade, Thomas J. Dale, Dana R. Hovey, Charles Emerson, and William M. Loring.

PERSONAL ACKNOWLEDGMENTS.

In closing this report, I deem it my duty to acknowledge the many favors at the hands of His Honor the Mayor, the Joint Standing Committee on Fire Department, and members of the City Council. To those several gentlemen my heartfelt thanks are due.

The Board of Engineers will also accept my acknowledgments for the manner in which they have performed their duties and for their ready co-operation at all times.

The officers and members of the several fire companies have my fullest appreciation of their services during the year, for to them much of the success attending the Department is due.

Chief of Police Copeland and his subordinate officers, together with the Fire Police, are deservedly entitled to commendation for the faithful manner in which they have rendered service at fires in protecting the property of citizens and preserving order. The chiefs of neighboring Fire Departments, and the men under their command, will please accept my thanks for their valuable assistance to our own Department at fires during the present and former years.

The several heads of departments, and all others who have in any way rendered service to this Department, are included in these expressions of gratitude.

I again desire to express my obligations to the Honorable Mayor and City Council for the cheerful co-operation accorded me upon every occasion. The warm and ready responses to all recommendations and suggestions coming from this Department have encouraged the hearts of those who have had the interests and welfare of the Department in view.

The recognition of services, and the desire to make the performance of duty more cheering, has been the desire of the government, — for all of which a grateful heart finds words inadequate to give expression to its feelings.

Respectfully submitted.

PATRICK H. RAYMOND,

Chief Engineer Cambridge Fire Department.

APPENDIX.

Committee on Fire Department.

Aldermen	Sawin and Woodbridge.
Councilmen	Tobin, Grieves, and Wheeler.

Board of Engineers.

Name.	Age.	Residence.	Occupation.
Patrick H. Raymond, Chief . .	43	20 Jay Street . . .	Reporter.
Thomas J. Casey, 1st Assistant	40	173 Cambridge Street	Carver.
Albert Norris, 2d „	43	34 Western Avenue .	Builder.
Daniel O'Connell, 3d „	45	219 North Avenue .	Clerk.
John P. Farmer, Jr., 4th „	31	29 Mellen Street . .	Provision D'r.
John P. Farmer, Jr., Secretary.			

Cambridge Steam Fire Engine Company, No. 1.

House on Church Street.

This engine was built by the Amoskeag Manufacturing Company, Manchester, N.H., and is rated as second class. It is supplied with one steam cylinder $8\frac{1}{2}$ inches in diameter; one double-acting, vertical plunger pump $4\frac{3}{4}$ inches in diameter, with 12-inch stroke. The engine is supplied with two copper tanks, which contain a supply of fresh water, to be used when drafting sea water. The engine, when worked to its full capacity, will discharge 400 gallons per minute.

Put in service Sept. 18, 1864.

Name.	No. Badge.	Age.	Occupation.
George Cooley, *Foreman*	1	41	Carpenter.
William H. Emory, *Assistant Foreman*	2	40	Printer.
Edward E. Priest, *Engineer*	3	36	Engineer.
John L. Jones, Jr., *Fireman*	4	22	Printer.
Hiram W. Hooker, *Driver of Engine*	5	35	Driver.
Robert T. Hixon, *Driver of Hose-Carriage*	10	29	Driver.
Hugh McNamee, *Hoseman*	6	44	Painter.
Conrad D. Kinnear, ,,	11	35	Clerk.
Francis P. Scanlan, ,,	13	27	Painter.
John K. Perkins, ,,	12	24	Carpenter.
Maurice F. MaGraw, ,,	14	33	Iron Moulder.
Hugh T. Barker, ,,	7	23	Carpenter.
Thomas W. Jones, ,,	8	24	Electrotype Finisher.
John Byron, ,,	9	24	Painter.

Union Steam Fire Engine Company, No. 2.

House on Main Street, near Winsor.

This engine was contracted for in August, 1873, and put in service Nov. 28, 1873. The engine is of second-class construction, and was built by the Amoskeag Manufacturing Company, Manchester, N.H., where the several engines in the Department were constructed.

The boiler contains 301 brass tubes, each tube being 18 inches long and $1\frac{1}{4}$ inches in diameter. The main forcing pump, double-acting and made of brass, measures $4\frac{1}{4}$ inches in diameter, and has a stroke of 8 inches. The steam cylinders have a diameter of $6\frac{7}{8}$ inches, and an 8-inch stroke. The engine is of improved design, and bears upon each side of the driver's seat likenesses of Alderman Robert L. Sawin and Councilman Richard F. Tobin, members of the Joint Standing Committee on Fire Department.

The weight of engine with fuel and water is 6,250 pounds.

Name.	No. Badge.	Age.	Occupation.
William B. Cade, *Foreman*	15	39	Polisher.
Charles A. Paine, *Assistant Foreman*	22	33	Wood Moulder.
William Nickelson, *Engineer*	17	50	Engineer.
Amos B. Jarvis, *Fireman*	24	29	Paper Collar Cutter.
John H. Walker, *Driver of Engine*	19	44	Driver.
Joseph B. Cartwright, *Driver of Hose-Carriage*	20	37	Driver.
Charles E. Snow, *Hoseman*	26	33	Painter.
William H. Foss, ,,	27	33	Piano Action Maker.
Arthur C. Day, ,,	25	36	Box Maker.
Daniel McCarty, ,,	21	37	Blacksmith.
James Cunningham, ,,	28	31	Wood Turner.
Jeremiah R. Hobbs, ,,	23	24	Flask Maker.
Benjamin D. Foss, ,,	18	37	Carpenter.
Edward Brady, ,,	16	25	Iron Moulder.

Niagara Steam Fire Engine Company, No. 3.

House on Fourth Street.

This engine was contracted for in 1871, and put in service Jan. 19, 1872, and is a fine and very powerful specimen of steam machinery used for the extinguishment of fires. Like all other steamers owned by the City, it was built by the Amoskeag Manufacturing Company, of Manchester, N.H. The engine is of first-class construction, and has a boiler 32 inches in diameter and 66 inches long, containing 301 brass tubes, each tube being 18 inches long and $1\frac{1}{4}$ inches in diameter.

The main forcing pump is $4\frac{3}{8}$ inches in diameter, and has a stroke of 8 inches in length. The steam cylinders measure $7\frac{3}{4}$ inches in diameter, with a stroke of piston of 8 inches.

The engine is complete in every particular, and, while being very beautifully ornamented and showy, is capable of discharging 600 gallons of water per minute.

Name.	No. Badge.	Age.	Occupation.
Thomas J. Dale, *Foreman*	32	32	Fish & Oyster Dealer.
Michael G. Collins, *Assistant Foreman*	36	29	Painter.
Hiram Blood, *Engineer*	31	41	Engineer.
Charles E. Berry, *Fireman*	29	25	Machinist.
James S. Casey, *Driver of Engine*	33	37	Driver.
Lorenzo H. Dale, *Driver of Hose-Carriage*	34	31	Driver.
John D. DeRonde, *Hoseman*	39	34	Cabinet Maker.
Elliott E. Alley, „	30	37	Upholsterer.
Joseph T. Smith, „	35	25	Carpenter.
James H. Berry, „	37	29	Carpenter.
William F. Newman, „	38	27	Wood Worker.
Charles W. Porter, „	42	25	Coal Dealer.
John Casey, „	41	23	Britannia Worker.
Francis P. Carr, „	40	33	Glass Maker.

Daniel Webster Steam Fire Engine Company, No. 4.

House on North Avenue, near Russell Street.

This engine is of the double pump, second class, small size pattern, with $4\frac{1}{8}$-inch pump cylinders, and 8-inch stroke, steam cylinders $6\frac{7}{8}$-inch diameter, and 8-inch stroke; and, without fuel or water, in weight 5,800 pounds. It was built by the Amoskeag Manufacturing Company of Manchester, N.H., and put in service May 28, 1869.

Name.	No. Badge.	Age.	Occupation.
Dana R. Hovey, *Foreman*	43	34	Clerk.
John W. Holbrook, *Assistant Foreman*	56	31	Carriage Trimmer.
John E. Ricker, *Engineer*	45	29	Engineer.
Sylvanus G. Griffin, *Fireman*	50	27	Machinist.
George T. Presby, *Driver of Engine*	47	30	Driver.
George E. Muzzey, *Driver of Hose-Carriage*	48	31	Driver.
Benjamin Young, *Hoseman*	49	28	Carpenter.
Abiel E. Long, „	52	28	Wheelwright.
Harmon Parsons, „	46	33	Carpenter.
Charles E. Presby, „	51	38	Mason.
Nathaniel W. Bunker, „	55	30	Carpenter.
John H. Cannon, „	44	24	Clerk.
James H. Presby, „	53	32	Mason.
John L. Sproul, „	54	22	Plumber.

The several hose-carriages which accompany the engines are drawn by horses, and have four wheels.

Franklin Hook and Ladder Company, No. 1.

House on Main Street, near Winsor.

The apparatus operated by this Company is drawn to fires by horses.

Name.	No. Badge.	Age.	Occupation.
James P. Ewell, *Foreman*	62	37	Piano-forte key Maker.
Charles Emerson, *Assistant Foreman*	69	28	Confectioner.
George W. Lamson, *Driver of Truck*	59	32	Driver.
Lewis C. Clark, *Ladder-man*	71	28	Confectioner.
Charles S. Abbott, „	65	33	Box Maker.
James R. Bowlby, „	66	26	Blacksmith.
Charles H. Wiggin, Jr. „	70	25	Furniture Polisher.
Hamilton Porter, „	63	30	Machinist.
Elisha W. Morey, „	61	26	Furniture Polisher.
Albert S. Benson, „	72	29	Box Maker.
Charles H. Waite, „	73	27	Clerk.
George R. Oliver, „	57	22	Polisher.
John T. Mahaffey, „	67	28	Carpenter.
R. O. Stockbridge, „	75	29	Carpenter.
William Parks, „	77	29	Iron Moulder.
Daniel E. Owen, „	60	29	Pew Builder.
Orville Van Duzee, „	78	29	Iron Moulder.
John H. Brown, „	76	22	Cigar Maker.
Clarence A. Moore, „	58	23	Confectioner.
William H. Lydston, „	68	26	Carpenter.
Charles A. Sharon, „	64	24	Machinist.

RECAPITULATION.

Number of Engineers			5
Members			81
Steam Fire Engines			6
Horses			16
Horse Hose Carriages			7
Fuel Wagons			4
Feet of Leading Hose (good)			7,950
,, ,, ,, (ordinary)			1,900
,, ,, ,, (worthless)			900
H. & L. Carriage			1
Ladders			20
Large Hooks with Chains			4
Hand Hooks with Poles			4
Fire Rakes			5
Pitchforks			8
Crotch Poles			7
Fire Hats			90
Reservoirs			50
Hydrants			411
Fires and Alarms in the city		88	
Fires and Alarms out of the city		9	
			97

Loss on Buildings and Stock	$200,809.91
Insurance on Losses	112,138.75
Total Loss	$88,671.16

RECORD OF FIRES AND ALARMS FROM DEC. 1, 1872, TO NOV. 30, 1873.

Day of Week.	Date.	Hour.	Box	Owners of Property.	Occupants.	Location.	Loss.	Insurance.	Apparatus present.	Remarks.
	1872.									
Saturday .	Dec. 14	4.30 A.M.	26	D. C. Smart . . .	D. C. Smart & others	Main Street .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Fire supposed to have originated by spontaneous combustion.
Sunday . .	,, 15	6.10 P.M.	8	W. W. Eastham . .	Several families . .	Third Street .	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1.	Burning of meat on cook-stove.
Tuesday .	,, 17	4.35 P.M.	54	Nichols . .	Charles H. Burleigh	Nichols Court	,, .	. . . .	Engines 1 & 2, and H. & L. 1.	Burning of mattress.
Thursday .	,, 26	9.50 P.M.	59	Union Railway Co. .	Union Railway Co. .	Harvard Sq. .	$1,200	$1,200	Engines 1, 2, & 4, and H. & L. 1.	Supposed incendiary, the fire originating in a closet where waste paper was stored.
Friday . .	,, 27	4.00 A.M.	. .	Bay State Brick Co.	Bay State Brick Co.	Spruce Street	700	. . . .	No apparatus present.	Roof of brick-kiln, fire extinguished by employees without alarm.
	1873.									
Sunday . .	Jan. 5	9.10 P.M.	36	Chamberlin & Hyde	George Woods & Co.	Main Street .	24,800	22,300	Engines 1, 2, 3, & 4, and H. & L. 1.	Fire supposed to have been caused by furnace door being forced open by foul air, and sparks from furnace fire scattered among shavings on the floor of basement.
Sunday . .	,, 5	9.15 P.M.	36	,, ,,	D. U. Chamberlin &	,, ,, .				
Sunday . .	,, 5	9.20 P.M.	36	,, ,,	Co.	,, ,, .				
Wednesday	,, 8	1.30 A.M.	32	John Conlan . . .	William Reardon .	Winsor Street	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1.	Fire caused by overheated stove-pipe from furnace.
Friday . .	,, 10	10.30 P.M.	. .	S. S. Edgehill . . .	S. S. Edgehill . . .	Cedar Street .	Trifling .	. . . .	No apparatus present.	Explosion of chemicals; fire extinguished by the police.
Saturday .	,, 11	5.45 P.M.	6	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Fire-alarm box tampered with by some person unknown.
Tuesday .	,, 14	11.10 P.M.	82	Jacob Hittinger . .	Jacob Hittinger . .	Belmont . .	. . . .	. . . .	Engines 1 & 4, and H. & L. 1.	Assistance rendered.
Tuesday .	,, 28	1.50 A.M.	42	James Dinsmore .	Geo. B. Lothrop & Co.	Sands Street .	400	. . . .	Engines 1 & 2, and H. & L. 1.	Kindling material placed too near cylinder stove.
					A. Umberhand . .	,, ,, .				
Friday . .	Feb. 7	11.40 A.M.	36	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engines 1, 2, & 3, and H. & L. 1.	Alarm given to test the fire-alarm, and to exhibit the alacrity of the firemen to a committee of the Salem City Council.
Thursday .	,, 13	2.40 P.M.	26	Winthrop A. Ward & Co.	Winthrop A. Ward & Co.	Main Street .	8,400	8,400	Engines 1, 2, & 3, and H. & L. 1.	Fire supposed to have been caused by the overturning of a stove.
Thursday .	,, 13	2.45 P.M.	6	,, ,,	,, ,,	,, ,, .				Alarm given for same fire.
Saturday .	,, 15	8.00 P.M.	31	Daniel Boyle . . .	Daniel Boyle & others	Cambridge St.	75	75	Engines 1, 2, & 3, and H. & L. 1.	Kindling-wood set on fire by accident.
Saturday .	,, 15	8.08 P.M.	31	,, ,, . .	,, ,,	,, ,,				
Sunday . .	,, 23	3.55 A.M.	13	John Collier . . .	Charles Brady ,, . .	Stevens Court ,,	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1.	Burning of clothing caused by the overturning of a candle.
					Amounts carried forward . .		$35,575	$31,975		

RECORD OF FIRES AND ALARMS FROM DEC. 1, 1872, TO NOV. 30, 1873. — *Continued.*

Day of Week.	Date.	Hour.	Box	Owners of Property.	Occupants.	Location.	Loss.	Insurance.	Apparatus present.	Remarks.
	1873.				*Amounts brought forward*		$35,575	$31,975		
Sunday . .	Feb. 23	9.35 P.M.	13	—— Merrill . . .	—— Merrill . . .	Somerville . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Alarm first given in Cambridge, and assistance rendered.
Thursday .	,, 27	1.12 P.M.	9	Mary Horan . . .	Mary Horan & others	North Street .	700	700	Engines 1, 2, & 3, and H. & L. 1.	Overheated stove-pipe set shavings on fire in apartment occupied by basket manufacturer.
Thursday .	,, 27	1.20 P.M.	9	,, . ,, . . .	,, ,, ,,	,, ,, .				
Thursday .	Mar. 27	12.27 P.M.	36	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engines 1, 2, & 3, and H. & L. 1.	Exhibition of fire-alarm and fire department to a visiting committee from Newton.
Friday . .	,, 28	10.30 A.M.	Bell	Harvard University	John Wilson & Son .	Holyoke Street	Trifling .	. . . .	Engine 1.	Fire in ventilator caused by sparks from stereotype foundry.
Wednesday	April 9	7.40 P.M.	8	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Tampering with fire-alarm box by some malicious person.
Wednesday	,, 16	10.05 P.M.	25	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Box opened and alarm given without cause by some malicious person.
Friday . .	,, 18	3.05 A.M.	69	Benjamin Rogers .	Several families . .	Cogswell Av. .	9,400	9,400	Engines 1. 2, & 4, and H. & L. 1.	Block of dwelling-houses took fire from some unexplained cause.
Friday . .	,, 18	4.00 A.M.	69	,, ,, .	,, ,, . .	,, ,, .				
Saturday .	,, 19	1.40 A.M.	52	Richard Conway .	Richard Conway . .	Crane Street .	300	. . . .	Engines 1 & 2, and H. & L. 1.	Small shed, probably set on fire by thieves who were robbing a hen-roost.
Thursday .	,, 24	11.45 A.M.	78	Grace E. Doherty .	Several families . .	Concord Av. .	Trifling .	. . . .	Engines 1 & 4, and H & L. 1.	Roof of house set on fire by sparks from chimney.
Friday . .	,, 25	10.40 P.M.	27	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engine 3, and H. & L. 1.	Box maliciously tampered with by some person having a key.
Sunday . .	,, 27	11.40 P.M.	9	William Daily . .	Several families . .	Cambridge St.	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1.	Mattress set on fire by sparks from a smoker's pipe.
Tuesday .	May 6	10.40 A.M.	26	John Schwamb . .	John Schwamb . .	Osborn Street	550	. . . .	Engines 2 & 3, and H. & L. 1.	Lumber caught fire in dry-house from defective pipe used for heating.
Thursday .	,, 29	11.15 A.M.	42	James Dinsmore .	James Dinsmore .	Sands Street .	Trifling .	. . . .	Engines 1 & 2, and H. & L. 1.	Burning of shavings in boiler-room connected with planing-mill.
Friday . .	,, 30	9 30 A.M.	6	Various parties . .	Various parties . .	Boston . . .	. . . .	. . . .	Engines 1, 2, & 3, and H. & L. 1.	Assistance asked for and aid sent, our fire companies remaining at the fire several hours.
Friday . .	,, 30	9.40 A.M.	6	,, ,, . .	,, ,, . .	,, . . .				
Saturday .	,, 31	5.45 P.M.	54	Emmons Raymond .	John Law	Baldwin Place	Trifling .	. . . .	Engines 1 & 2, and H. & L. 1.	Loose excelsior set on fire in rear of house by children playing with matches.
Tuesday .	June 10	2.55 P.M.	28	Patrick Conlan . .	Patrick Conlan . .	Harvard Street	135	133	Engines 2 & 3, and H. & L. 1.	Fire supposed to have originated from a defective flue.
Saturday .	,, 21	3.20 P.M.	28	William F. Webster James W. Gates . .	Wm. F. Webster . . James W. Gates . .	Main Street . ,, ,, .	1,500	. . . .	Engines 2 & 3, and H. & L. 1.	Fire caused by varnish kettle boiling over in the factory of Mr. Webster.

Saturday .	June 21	4.10 P.M.	46	John Young . . .	John Young . . .	Cross Street .	Trifling .	. . . .	Engines 1 & 2, and H. & L. 1.	Loose excelsior near wood-shed set on fire by children.
Saturday .	,, 21	4.20 P.M.	8	Heirs of Charles Robinson	Thomas McLaughlin	Vine Street .	300	300	Engines 2 & 3, and H. & L. 1.	Cause of fire unknown, but attributed to mice and matches.
Saturday .	,, 21	4.25 P.M.	8	,, ,,	,, ,,	,, ,,				
Friday . .	,, 27	3.30 P.M.	52	John B. Williams .	John B. Williams .	Mt. Auburn St.	Trifling .	. . . .	Engines 1 & 2, and H. & L. 1.	Small shed set on fire by children playing with matches
Friday . .	,, 27	4.00 P.M.	52	Mrs. E. M. Richardson	Mrs. E. M. Richardson	Mt. Auburn St.	Trifling .	. . . .	Engines 1 & 2, and H. & L. 1.	Fire on roof of house supposed to have been occasioned by sparks from previous fire.
Sunday . .	July 6	11.40 A.M.	26	Edward Wiseman .	Edward Wiseman .	School Street .	125	125	Engines 2 & 3, and H. & L. 1.	Fire caused by defect in chimney.
Saturday .	,, 12	6.30 P.M.	25	Heirs of Rufus Fiske	Hurd & Taylor . .	Main St. (rear)	Trifling .	. . . .	Engines 2 & 3, and H & L. 1.	Old rags exposed to dry, set on fire by malicious boys.
Sunday . .	,, 13	12.40 A.M.	42	Unknown	Unknown	Brighton . .	. . . .	. . . .	Engines 1 & 2, and H. & L 1.	Assistance called for and aid sent.
Sunday . .	,, 13	8.45 P.M.	53	William Clark . .	Unoccupied . . .	Beaver Street	Trifling .	. . . .	Engines 1 & 2, and H. & L. 1.	Wood-shed set on fire by some unknown person.
Sunday . .	,, 20	3.45 A.M.	59	Unknown	Unknown	Brighton . . .	. . . .	. . . .	Engines 1, 2, & 4, and H. & L. 1.	Engines sent over in response to call for help.
Tuesday .	,, 22	11.50 P.M.	28	Richardson & Hampton	Richardson & Hampton	Hastings St. .	8,900	2,800 .	Engines 1, 2, & 3, and H. & L. 1.	Fire originated in tobacco manufactory from some unknown cause.
Tuesday .	,, 22	12.00 P.M.	28	Alexander Richardson	Alexander Richardson	Hastings St. .	448	448		
Tuesday .	,, 29	8.40 P.M.	13	—— Merrill . . .	—— Merrill . . .	Somerville . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	The fire being near the Cambridge line, the alarm was first given in this city.
Friday . .	Aug. 1	4.35 P.M.	9	Wellington Bros. .	Wellington Bros. .	Bridge Street .	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1.	Slight fire on roof of coal-shed caused by sparks from hoisting engine
Friday . .	,, 8	5.20 P.M.	59	John Little . . .	E. B. Prescott and others	Harvard Street	4,200	4,200	Engines 1, 2, & 4, and H. & L. 1.	Fire supposed to have been maliciously set beneath staircase in basement.
Saturday .	,, 9	9.20 P.M.	59	James M. Hilton .	Unoccupied . . .	Harvard Street	150	150	Engines 1, 2, & 4, and H. & L. 1.	Cause of fire unknown.
Sunday . .	,, 10	1.40 A.M.	38	W. Warnoek . . .	C. F. Davidson and W. Warnock . . .	Pearl Street .	315	315	Engines 1 & 2, and H. & L. 1.	Fire originated in grocery store occupied by Mr. Davidson, from some unexplained cause.
Friday . .	,, 15	10.45 P.M.	2	Unknown	Unknown	Boston . . .	. . . .	. . .	Engines 2 & 3.	Assistance called for by a messenger from Boston, a large fire then raging on Merrimack Street.
Sunday . .	,, 17	9.50 P.M.	73	Unknown	Unknown	Belmont . .	. . . .	. . . .	. . . . .	Alarm needlessly given.
					Amounts carried forward . .		$61,698	$50,546		

RECORD OF FIRES AND ALARMS FROM DEC. 1, 1872, TO NOV. 30, 1873. — *Continued.*

Day of Week.	Date.	Hour.	Box	Owners of Property.	Occupants.	Location.	Loss.	Insurance.	Apparatus present.	Remarks.
	1873.				*Amounts brought forward*		$61,698	$50,546		
Wednesday	Aug. 20	10.40 P.M.	69	A. H. Hews & Co. .	A. H. Hews & Co. .	Raymond St. .	8,000	6,307 .	Engines 1, 2, 3, & 4, and H. & L. 1.	Fire caused by overheated kiln in pottery. At this fire W. P. Cutler and N. W. Bunker of No. 4 Engine, and assistant foreman Emerson of No. 1 H. & L. were injured by falling timbers and by falls through hatchways; Geo. McKie, an employee, was also injured.
Wednesday	,, 20	11.05 P.M.	69	,, ,, ,, .	,, ,, ,, .	,, ,, .				
Wednesday	,, 20	11.10 P.M	69	,, ,, ,, .	,, ,, ,, .	,, ,, .				
Saturday .	,, 23	5.20 A.M.	32	Boynton & Co. . .	Boynton & Co. . .	Somerville . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Fire-alarm box pulled to secure the services of Cambridge Department. No alarm in Somerville.
Saturday .	,, 30	8.00 A.M.	15	Manuel Rice . . .	Manuel Rice & others	Vine Street .	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1	Alarm needlessly given, a bed being partially burnt in tenement house.
Monday . .	Sept. 15	2.00 P.M.	79	James Dinsmore .	Several families . .	Dinsmore Pl.	Trifling .	. . . .	Engines 1 & 4, and H. & L. 1.	Destruction of small shed connected with tenements, cause unknown.
Monday . .	,, 15	3.00 P.M.	15	Dennis Cavenaugh .	Dennis Cavenaugh .	Vine St. (rear)	Trifling .	. . . .	Engines 2 & 3, and H. & L. 1.	Burning of rags in cellar of dwelling-house.
Monday . .	,, 15	4.45 P.M.	8	W. W. Eastham . .	Several families . .	Third Street .	300	. . . .	Engines 1, 2, & 3, and H. & L. 1; also portions of the Somerville FireDepartment.	Cause of fire unknown; but probably by design, the building having been used as a place of shelter by vagabonds.
Monday . .	,, 15	4.55 P.M.	8	,, ,, . .	,, ,, . .	,, ,, .				
Wednesday	,, 17	1.00 P.M.	15	Andrew Burke . .	Andrew Burke . .	Vine Street .	175	175	Engines 2 & 3, and H. & L. 1.	The fire originated in a hen-coop, but from what cause could not be learned.
Sunday . .	,, 21	8.45 P.M.	69	Unknown	Unknown	Brighton . .	. . . .	. . . .	Engine 2.	Alarm given by an officer who entertained the opinion that the fire was on Walden Street, the light of it being so distinct.
Monday . .	,, 22	5.45 A.M.	42	Unknown	Unknown	Brighton . .	. . . .	. . . .	Engines 1 & 2, and H. & L. 1.	Assistance called for and rendered, the fire of the previous night having broken out afresh.
Monday . .	,, 29	4.00 P.M.	9	S. A. Holt & Co. .	S. A. Holt & Co. . .	East Street .	4,000	4,000	Engines 1, 2, 3, & 4, and H. & L. 1; also engines from Boston and Charlestown.	Fire originated in dry-house from disarranged heating pipes.
Monday . .	,, 29	4.05 P.M.	9	,, ,, ,, . .	,, ,, ,, . .	,, ,, .				
Monday . .	,, 29	4.10 P.M.	9	,, ,, ,, . .	,, ,, ,, . .	,, ,, .				
Tuesday .	,, 30	6.05 A.M.	41	Dover Stamping Co.	Dover Stamping Co.	Pleasant Street	5,000	. . . .	Engines 1, 2, 3, & 4, and H. & L. 1.	Fire caused by galvanizing kettle boiling over and setting wood-work on fire.
Tuesday .	,, 30	6.10 A.M.	41	,, ,, ,,	,, ,, ,,	,, ,,				

Tuesday .	Oct. 7	4.00 A.M.	82	Clara E. Rouillard .	Unoccupied . . .	Huron Street .	3,500	1,650	Engines 1 & 4, and H. & L. 1.	Unoccupied dwelling-house. Fire doubtless of incendiary origin.
Thursday .	,, 9	10.20 P.M.	28	Geo. G. Page & Co.	Geo. G. Page & Co.	Hampshire St.	35,000	18,000	Engines 1, 2, 3, & 4, and H. & L. 1; also engines from Boston, Somerville, & Charlestown.	The fire which occurred on the premises of the Messrs. Page, raged with great fury, and was well under way before the Department arrived.
Thursday .	,, 9	10.28 P.M.	28	,, ,, ,, ,, .	,, ,, ,, ,, .	,, ,,				
Thursday .	,, 9	10.35 P.M.	28	,, ,, ,, ,, .	,, ,, ,, ,, .	,, ,,				
Thursday .	,, 9	11.55 P.M.	27	Whittemore & Hale	Whittemore & Hale	Davis Street .	4,000	4,000	Engines 1 of this city, 4 of Boston, and 1 of Charlestown.	This fire is attributed to sparks from Engine No. 1, which, falling upon a shed used for the storage of rosin, set it on fire, while the fire at Page's was raging.
Saturday .	,, 11	6.00 P.M.	Bell	. . . . .	. . . . .	Cambridgeport only . . .	. . . .	. . . .	Engine 2, and H. & L. 1.	Alarm needless.
Tuesday .	,, 14	10.20 A.M.	2	Eastern Railroad Corporation . . .	Eastern Railroad Corporation . . .	Railr'd Bridge	50,000	. . . .	Engines 1, 2, & 3, and H. & L. 1; also engines from Boston, Charlestown, Somerville, and Chelsea.	The fire which caused so much destruction of property was caused by sparks from locomotive in the car-house on the bridge. Further particulars are given elsewhere in this Report.
Tuesday .	,, 14	10.25 A.M.	2			,, ,,				
Monday . .	,, 27	5.15 P.M.	52	F. Becker & Co. . .	F. Becker & Co. . .	Main Street .	. . . .	. . . .	Engines 1 & 2, and H. & L. 1.	Smoke from heating apparatus in green-house occasioned the alarm.
Monday . .	Nov. 3	7.45 P.M.	36	Sarah W. Watriss .	Sarah W. Watriss .	Main Street .	Trifling .	. . . .	Engines 1, 2, & 3, and H. & L. 1.	Burning of kindling-wood in shed. Cause of fire unknown.
Thursday .	,, 6	2.05 P.M.	72	J. & W. L. Hooper .	J. & W. L. Hooper	North Avenue	140	140	Engines 1 & 4, and H. & L. 1.	Fire accidentally communicated to clothing in closet in sleeping room.
Thursday .	,, 6	6.25 P.M.	65	Mrs. Sarah Snow .	J. A. Lockett and others	Wendell Street	Trifling .	. . . .	Engines 1 & 4, and H. & L 1.	Explosion of kerosene lamp.
Friday . .	,, 7	9.35 P.M.	8	. . . . .	. . . . .	. . . . .	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Fire-alarm box tampered with.
Wednesday	,, 12	7.10 P.M.	9	U. J. Dailey . . .	Several occupants .	Cambridge St.	. . . .	. . . .	Engines 2 & 3, and H. & L. 1.	Alarm needlessly given.
Thursday .	,, 13	3.30 A.M.	13	City of Cambridge .	Ward Room . . .	Fourth Street	300	. . . .	Engines 2 & 3, and H. & L. 1.	Fire supposed to have originated from steam-pipes.
Thursday .	,, 13	4.00 A.M.	Still	Cambridge Gas Light Co.	Cambridge Gas Light Co.	Third Street .	5,383.69	5,383.69	. . . . .	Spontaneous combustion of coal. Fire extinguished without alarm.
Tuesday .	,, 18	7.00 P.M.	8	Charles W. Munroe	Charles W. Munroe	Thorndike St.	7,413.22	6,437.06	Engines 1, 2, 3, & 4, and H. & L. 1.	Cause of fire unknown.
Tuesday .	,, 18	7.10 P.M	8	. . . . .	T. W. Shapleigh & Co.	,, ,,				
Tuesday .	,, 18	7.20 P.M.	8	. . . . .	A. J. Boynton & Co.	,, ,,				
Wednesday	,, 26	1.45 A.M.	72	S. G. Reed . . .	Several parties . .	Cedar Street .	15,900	15,500	Engines 1, 2, 3, & 4, and H. & L. 1; and engines from Somerville.	Cause of fire unknown.
Wednesday	,, 26	1.50 A.M.	72	,, ,, ...	,, ,, . .	,, ,,				
Wednesday	,, 26	2.10 A.M.	72	,, ,, ...	,, ,, . .	,, ,,				
							$200,809.91	$112,138.75		

HYDRANTS.

LOCATED IN WARD ONE.

Appleton Street, corner Highland.
Ash Street, corner New.
Baldwin Street, corner Baldwin Place.
Banks Street, corner Flagg.
Banks Street, corner Copperthwaite.
Banks Street, corner Crane.
Brattle Street, opposite the estates of Messrs. Longfellow and Hastings.
Brattle Street, corner Ash.
Brattle Street, corner Hilliard.
Brattle Street, corner University Press estate.
Brattle Street, corner Lowell.
Brattle Street, corner Fresh Pond Lane.
Brattle Street, opp. Mt. Auburn Greenhouse.
Brattle Street, front of Mrs. Wyeth's estate.
Brattle Street, near Coolidge Lane.
Brattle Street, corner Willard.
Brattle Street, corner Story.
Brattle Street, corner Channing.
Broadway, junction Cambridge Street.
Broadway, corner Prescott Street.
Broadway, corner Trowbridge Street.
Broadway, corner Quincy Street.
Broadway, corner Ware Street.
Broadway, corner Ellery Street.
Buckingham Street, opposite Stevens's barn.
Cambridge Street, corner Trowbridge.
Cambridge Street, front Scientific Sch.
Cambridge Street, corner Sumner.
Cambridge Street, corner Baldwin.
Cambridge Street, corner Quincy (post).
Cambridge Street, opp. Felton (post).
Chauncy Street, 500 feet from North Avenue.
Church Street, corner Palmer.
Concord Avenue, junction of Waterhouse Street.
Concord Avenue, corner Sparks Street.
Concord Avenue, opp. Craigie Street.
Concord Avenue, corner Follen (post).
Craigie Street, midway.
Craigie Street, near corner Sparks.
Crane Street, corner De Wolf.
De Wolf Street, near Copperthwaite.
Divinity Avenue, opposite Museum.
Dunster Street, corner South.
Dunster Street, corner Mt. Auburn.
Eliot Street, opposite Bennett.
Ellery Street, corner Main.
Ellery St., east side, midway between Broadway and Cambridge Street.
Everett Street, south side, midway between North Avenue and Oxford St.
Fayerweather Street, corner Brattle.
Fayerweather Street, opp. Reservoir.
Foster Street, corner Brown.
Garden Street, corner Mason.
Garden Street, corner Wallace.
Harvard Square, between rails of R.R. track.
Harvard Street, corner Remington.
Harvard Street, opp. Harvard Block.
Kirkland St., near Baldwin, south side.
Kirkland Street, corner Trowbridge, south side.
Kirkland Street, cor. Irving, south side.
Kirkland Street, cor. Sumner, south side.
Kirkland Street, cor. Quincy, south side.
Kirkland Street, opp. Memorial Hall.
Lakeview Avenue, 500 feet from Brattle Street.
Main Street, junction of Harvard.
Main Street, corner Trowbridge.
Main Street, opposite Bay.
Main Street, near Baptist Church.
Mellen Street, corner Oxford.
Mill Street, corner Charles River.
Mt. Auburn Street, corner Brighton.
Mt. Auburn Street, corner Brewer.
Mt. Auburn Street, opp. McClellan.
Mt. Auburn and Bow Streets.
Mt. Auburn Street, opp. De Wolf.
Mt. Auburn Street, 200 feet west Cemetery gate, inside enclosure.
Mt. Auburn Street, corner Willard.
Mt. Auburn Street, corner Sparks.
Mt. Auburn Street, opp. McDonald's Marble Works.
Mt. Auburn Street, near R.R. Stables, in Belmont.
Murray Street, near Charles River.
North Avenue, corner Chauncy Street.
North Avenue, corner Shepard Street.
North Avenue, corner Holmes Place.
North Avenue, corner Jarvis Street.
Oxford Street, near Jarvis.
Oxford Street, corner Everett.
Phillip's Place, corner Berkeley Street.
Prescott Street, corner Harvard.
Putnam Avenue, corner Western Avenue.
Sparks Street, corner Foster.
Sparks Street, opp. Chas. T. Russell's.

LOCATED IN WARD TWO.

Amory Street, corner Summer.
Antrim Street, near Broadway.
Austin Street, corner Essex (post).
Austin Street, corner Prospect (post).
Austin Street, corner Temple (post).
Bigelow Street, midway between Main and Harvard.
Broadway, corner Highland Avenue.
Broadway, junction Main Street.
Broadway, corner Hancock Street.
Broadway, corner Antrim Street.
Broadway, corner Tremont Street.
Broadway, corner Elm Street.
Broadway, corner Dock Street.
Broadway, corner Third Street.
Broadway, corner Dana Street.
Broadway, corner Ellsworth Avenue.
Broadway, corner Fayette Street.
Broadway, corner Amory Street.
Broadway, corner Norfolk Street.
Broadway, corner Boardman Street.
Broadway, junction Hampshire Street.
Broadway, opp. Thayer's Laboratory.
Broadway, near Broadway House.
Broadway, corner Clark Street (post).
Cambridge Street, corner Rideout.
Cambridge Street, corner Norfolk.
Cambridge Street, corner Willow Place.
Cambridge Street, corner Prospect.
Cambridge Street, corner Tremont.
Cambridge Street, opposite Fayette.
Cambridge Street, north side, near junc. of Hampshire and Cambridge.
Cambridge Street, opp. head of Maple Avenue.
Cambridge Street, corner McCabe.
Cambridge Street, corner Elm (post).
Cambridge Street, corner Winsor (post).
Cambridge Street, near Mr. Rafferty's house (post).
Cambridge Street, nearly opp. Highland Avenue (post).
Centre Street, opp. Dana School-house.
Columbia Street, corner Washington.
Columbia Street, corner Lincoln.
Columbia Street, corner Market.
Columbia Street, corner Hampshire.
Columbia Street, corner Harvard.
Davis Street, corner Broadway.
Elm Street, corner Market.
Essex Street, westerly side, midway between Harvard and Austin.
Fayette Street, 500 feet from Broadway.
Hampshire Street, cor. Portland (post).
Harvard Street, corner Pine.
Harvard Street, corner Hancock.
Harvard Street, corner Dana.
Harvard Street, corner Clark.
Harvard Street, corner Moore.
Harvard Street, corner Norfolk.
Harvard Street, corner Portland.
Harvard Street, corner Brewery.
Harvard Street, corner Clinton.
Houghton Street, corner Bolton, in Somerville.
Hunting Street, 400 ft. from Cambridge.
Inman Street, near Austin.
Inman Street, corner Harvard.
Inman Street, corner Broadway.
Inman Street, corner Summer.
Jefferson Street, corner Rideout.
Main Street, corner Lee.
Main Street, corner Hancock.
Main Street, corner Dock.
Main Street, corner Essex.
Main Street, opposite Pleasant.
Main Street, corner Bigelow.
Main Street, junction Harvard.
Main Street, corner Pioneer (post).
Maple Ave., midway between Broadway and Cambridge Street.
Market Street, corner Union.
Moore Street, head of Hastings.
Norfolk Street, corner Hampshire.
Norfolk Street, corner Worcester.
Norfolk Street, head of Washington.
Oak Street, west side, near Somerville line.
Plymouth Street, corner York.
Prospect Street, opposite B. Tilton's.
Prospect Street, corner Broadway.
Prospect Street, corner Hampshire.
Prospect Street, corner Main.
Prospect Street, corner Gardner.
South Street, opp. Willow, Somerville.
South Street, corner Gore, Somerville.
Tremont Street, near Wellington's House.
Tremont Street, near Cambridge.
Union Street, corner Hampshire.
Ward Street, cor. Horace, Somerville.
Washington Street, corner Clark.
Webster Avenue, corner Elm.
Webster Avenue, corner Bristol.
Webster Avenue, corner Winsor.
Webster Avenue, corner Hampshire.
Webster Avenue, corner Plymouth.
Webster Avenue, corner Cambridge Street (post).
West Boston Bridge.
West Boston Bridge.
Winsor Street, corner Lincoln.
Winsor Street, corner Hampshire.
Winsor Street, corner Washington.
Winsor Street, nr. Somerville line (post).
Winsor Street, corner Broadway (post).

LOCATED IN WARD THREE.

Bridge Street, corner Prison Point.
Bridge Street, corner Short.
Bridge Street, corner Water.
Bridge Street, opp. Wellington's Counting-room.
Bridge Street, opp. Bay State Glass-house.
Bridge Street, north side, opp. Braman, Shaw, and Co.'s.
Cambridge Street, opposite First.
Cambridge Street, corner Carson.
Cambridge Street, corner Daily's Alley.
Cambridge Street, corner Third.
Cambridge Street, junction Bridge St.
Cambridge Street, corner Sixth.
Cambridge Street, near Railroad Crossing (post).
Cambridge Street, opp. Seventh (post).
Cambridge Street, opposite No. 141 (post).
Cambridge Street, corner Fourth (post).
Charles Street, corner Fourth.
Eighth Street, corner Cambridge.
Fifth Street, corner Charles.
Fifth Street, corner Spring.
Fifth Street, corner Cambridge.
Fifth Street, corner Gore.
Fourth Street, corner Winter.
Fourth Street, corner Bridge.
Fourth Street, corner Cambridge.
Fourth Street, corner Vine.
Fourth Street, corner Thorndike.
Gore Street, corner Carson.
Gore Street, corner Fourth.
Jefferson Street, corner Warren.
North Street, corner East.
North St., near Glass Co.'s cutting-shop.
Otis Street, corner First.
Otis Street, corner Third.
Otis Street, corner Seventh.
Otis Street, corner Ninth.
Prison Point Street, 50 feet north of Ice Sheds.
Prison Point Street, on R.R. track, 300 feet from street.
Prison Point Street, on R.R. track, 600 feet from street.
Prison Point Street, 400 ft. from Bridge Street.
Second Street, corner Thorndike.
Second Street, corner Otis.
Second Street, corner Cambridge.
Sixth Street, corner Gore.
Sixth Street, corner Potter.
Spring Street, corner Second.
Spring Street, corner Third.
Spring Street, corner Fourth.
Third Street, corner Winter.
Third Street, corner Vine.
Third Street, near Charles.
Third Street, corner Walker Place.
Third Street, corner Bridge (post).
Thorndike Street, corner Sixth.
Thorndike Street, corner Fifth.
Thorndike Street, near Woodbury's Mill (post).
Thorndike Street, corner Second (post).
Vine Street, corner Fifth.
Vine Street, corner Sixth.
Water Street, near Sugar-house.

LOCATED IN WARD FOUR.

Austin Street, corner Douglass (post).
Austin Street, corner Norfolk (post).
Blackstone St., west side, 100 ft. from Avenue.
Brookline Street, corner Allston.
Brookline Street, corner Hamilton.
Brookline Street, corner Valentine.
Brookline Street, cor. Putnam Avenue.
Brookline Street, corner Erie.
Brookline Street, corner Franklin.
Brookline Street, corner Chestnut.
Cherry Street, opposite Eaton.
Chestnut Street, corner Pearl.
Columbia Street, corner Austin.
Franklin Street, corner Soden.
Franklin Street, corner Cross.
Franklin Street, corner Bay.
Franklin Street, near the hill.
Franklin Street, corner Sidney.
Franklin Street, corner Magazine.
Front Street, junction State Street.
Green Street, corner Bay.
Green Street, opposite Vernon.
Green Street, corner Putnam Avenue.
Kinnaird Street, corner Bay.
Kinnaird Street, cor. Putnam Avenue.
Magazine Street, corner Cottage.
Magazine Street, cor. Putnam Avenue.
Magazine Street, corner Warland.
Magazine Street, corner Auburn.
Magazine Street, corner Park.
Magazine Street, corner Upton.
Magazine Street, opp. Hamilton.
Magazine Street, corner Florence.
Main Street, corner Columbia.
Main Street, corner Winsor.
Main Street, opposite Brook's Buildings.
Main Street, corner Norfolk.
Main, junction Austin Street.
Main Street, north side, opp. Kennedy's Bakery.
Main Street, corner Washington.
Main Street, corner Brewery.

WARD FOUR. — *Continued.*

Main Street, corner Portland.
Pearl Street, corner Lake.
Pearl Street, corner Putnam Avenue.
Pearl Street, corner Perry.
Pearl Street, corner Cottage.
Pearl Street, corner Auburn.
Pleasant Street, corner Upton.
Pleasant Street, corner Green.
Pleasant Street, corner Franklin.
Pleasant Street, cor. Putnam Avenue.
Pleasant Street, corner Somerset.
Pleasant Street, corner Park.
Pleasant Street, corner Prince.
Pleasant Street, corner Pleasant Place.
Pleasant Street, corner Chestnut.
Putnam Avenue, corner Putnam Place.
Putnam Ave., cor. Walnut Court (post).
River Street, corner Franklin.
River Street, opposite Cottage.
River Street, opposite Laurel.
River Street, corner Blackstone.
River Street, opposite Fairmont.
School Street, in the elbow.
School Street, corner Clark.
Sidney Street, corner Allston.
Sidney Street, corner Putnam Avenue.
Sidney Street, corner Chestnut.
Soden Street, corner Western Avenue.
Washington Street, near Brewery.
Washington Street, cor. Brewery (post).
Washington Street, cor. Portland (post).
Washington Street, cor. Moore (post).
Waverly Street, opposite Willard's.
Western Ave., corner Howard Street.
Western Avenue, cor. Kinnaird Street.
Western Avenue, corner Jay Street.

LOCATED IN WARD FIVE.

Arlington Street, 500 feet from North Avenue.
Beech Street, east side, 20 feet from Orchard Street.
Cedar Street, corner Spruce.
Cedar Street, opposite Norris.
Cedar Street, opposite Green house.
Concord Avenue, cor. Madison Street.
Concord Avenue, opp. Bond Street.
Concord Avenue, cor. Walden Street.
Concord Avenue, opp. Eames's Estate.
Cogswell Avenue, cor. Mead Street.
Crescent Avenue, corner Raymond.
Crescent Avenue, cor. Lambert Avenue.
Crescent Street, cor. Sacramento Street (post).
Donnell Street, corner Garden.
Dublin Street, 525 ft. from Spruce St.
Dublin Street, 620 ft. from Walden St.
Dublin Street, corner Walden.
Dublin Street, corner Sargent.
Dublin Street, corner Bolton.
Fairfield Street, opp. Mr. Whitney's.
Garden Court, corner Dublin Street.
Garden Street, opposite Bond.
Harvey Street, opposite Montgomery.
Hollis Street, in the elbow.
Hubbard Avenue, opp. Brick Block.
Hubbard Avenue, cor. Raymond Street.
Hubbard Street, near Walden.
Hubbard Street, corner Raymond.
Lambert Avenue, opp. R. R. office.
Lambert Avenue, cor. Shawmut Ave. (post).
Linnæan Street, corner Avon.
Linnæan Street, corner Bowdoin.
Linnæan Street, corner Raymond.
Milk Street, corner White.
North Avenue, near R. R. Bridge.
North Avenue, cor. Cogswell Avenue.
North Avenue, corner Allen Street.
North Avenue, corner Dover Street.
North Avenue, 300 ft. west of Tannery.
North Avenue, cor. Sacramento Street.
North Avenue, opp. Linnæan Street.
North Avenue, corner Chester Street.
North Avenue, corner Arlington Street.
North Avenue, corner Rice Street.
North Avenue, corner Cedar Street.
North Avenue, opposite Tannery.
North Avenue, near Walcott Richardson's gate.
North Avenue, corner Beech.
North Avenue, cor. Frank Street (post).
North Avenue, corner Day Street.
Norton Street, midway.
Orchard Street, opp. Tenney Court.
Oxford Street, corner Forest.
Oxford Street, opposite Eustis Court.
Oxford Street, corner Sacramento.
Raymond Street, south side, near Mr. Dresser's estate, two.
Reed Street, 250 ft. from Harvey.
Reed Street, opposite School-house.
Rice Street, opposite L. L. Cushing's.
Roseland Street, corner Frost.
Shepard Street, corner Avon.
Spruce Street, corner Hollis.
Spruce Street, corner Sargent.
Spruce Street, corner Montgomery.
Spruce Street, corner North Avenue.
Spruce Street, opposite School-house.
Spruce Street, corner Clay.
Spruce Street, corner Clifton.
Tuttle Street, opposite Ladd's barn.
Walden Street, opposite Mead.
Walden Street, cor. Hubbard Avenue.
Wallace Street, in the elbow.
Washington Avenue, corner Dexter.
Washington Avenue, opposite Paper Street.
Wyeth Street, corner Garden.

RESERVOIRS.

LOCATED IN WARD ONE.

Bow Street, centre of Square.
Brighton Street, corner Eliot.
Cambridge Street, nearly opposite Sumner.
College Yard.
Garden Street, north end Appian Way.
Junction Garden Street and Concord Avenue, opposite Arsenal.
Kirkland Street, opposite Oxford.
Main Street, corner Dana.
Mount Auburn Street, opposite the Church.
Prescott Street, near J. D. Green's barn.
Square, front of house of late Dr. Holmes.

LOCATED IN WARD TWO.

Austin Street, between Temple and Inman.
Broadway, head of Tremont.
Broadway, corner Winsor.
Cambridge Street, cor. Webster Avenue.
Clark Street, corner Hampshire.
Essex Street, corner Austin.
Harvard Street, opp. Burial-ground.
Harvard Street, head of Cherry.
Harvard Street, corner Davis.
Harvard Street, corner Prospect.
Main Street, junction Broadway.
Norfolk Street, midway between Broadway and Hampshire.
Prospect Street, 175 feet north of Broadway.
Washington Street, corner Cherry.

LOCATED IN WARD THREE.

Cambridge Street, 70 feet east of Third.
Gore Street, corner North Third.
Junction Bridge and Gore Streets.
New England Glass Co.'s Yard.
Otis Street, corner Fourth.
Revere Sugar Refinery Yard.
South Sixth Street, corner Spring.
Thorndike Street, corner Third.
Under N. England Glass Co.'s Building.
Under Lowell R. R. Machine Shop.

LOCATED IN WARD FOUR.

Austin Street, corner Douglass.
Brookline Street, corner Auburn.
Junction Western Ave. and Pleasant St.
Magazine Street, corner William.
Main Street, corner Austin.
Main Street, corner Brookline.
Main Street, 50 feet west of Osborn St.
Main Street, Junction of Western Avenue and River Street.
Main Street, front of Univer. Church.
Pearl Street, corner Franklin.
Pearl Street, near Jones & Co.'s Factory.
School Street, corner Cherry.
Washington Street, corner Pine.

LOCATED IN WARD FIVE.

In Square, opposite Porter's Hotel.
North Avenue, corner Russell Street.

Street Telegraph Stations.

A list of Fire Alarm Stations is herewith presented, with a table showing the number of each apparatus which responds thereto on the first, second, and third alarm.

Boxes.	Location.	First Alarm.		Second Alarm.	Third Alarm.
		Engines.	H. & L.	Engines.	Engines.
2	Bridge, corner Prison Point Street.	2 and 3	1	1	4
6	Third Street, corner Broadway.	2 and 3	1	1	4
8	Thorndike, corner Third Street.	2 and 3	1	1	4
9	Cambridge Street, Beal and Hooper's Building.	2 and 3	1	1	4
12	Winter, corner Third Street.	2 and 3	1	1	4
13	Fourth Street, No. 3 Engine-house.	2 and 3	1	1	4
14	Sixth, corner Cambridge Street.	2 and 3	1	1	4
15	Vine, corner Fifth Street.	2 and 3	1	1	4
16	Broadway, Hancock and Greeley's Building.	2 and 3	1	1	4
17	Washington, corner Brewery Street.	2 and 3	1	1	4
24	Brookline, corner Valentine Street.	2 and 3	1	1	4
25	Main and Front Streets (junction).	2 and 3	1	1	4
26	Main, corner Osborn Street.	2 and 3	1	1	4
27	Clark, corner Harvard Street.	2 and 3	1	1	4
28	Broadway, near Last Factory.	2 and 3	1	1	4
31	Cambridge, corner Rideout Street.	2 and 3	1	1 and 4	. .
32	Cambridge, corner Webster Avenue.	2 and 3	1	1 and 4	. .
34	Columbia, corner Hampshire Street.	2 and 3	1	1 and 4	. .
35	Harvard, corner Norfolk Street.	2 and 3	1	1 and 4	. .
36	Main, corner Western Avenue.	1, 2 & 3	1	4	. .
37	Pleasant, cor. River Street (junction).	1 and 2	1	3 and 4	. .
38	Magazine, corner Lake Street.	1 and 2	1	3 and 4	. .
41	Pleasant, corner Fairmont Street.	1 and 2	1	3 and 4	. .
42	Blackstone Street, opposite Riverside Press.	1 and 2	1	3 and 4	. .
46	Main, corner Cross Street.	1 and 2	1	3 and 4	. .
47	Broadway, corner Antrim Street.	1 and 2	1	3 and 4	. .
48	Cambridge, corner Hampshire Street (junction).	1, 2 & 3	1	4	. .
51	Broadway, corner Ellery Street.	1 and 2	1	4	3
52	Mt. Auburn and Main Sts. (junction).	1 and 2	1	4	3
53	Mt. Auburn, corner Linden Street.	1 and 2	1	4	3
54	Cambridge, corner Sumner Street.	1 and 2	1	4	3
59	Harvard Sq., Ramsay's Apothecary.	1, 2 & 4	1	. .	3
62	Mt. Auburn, corner Hilliard Street.	1 and 4	1	2	3
63	Brattle, corner Mason St. (junction).	1 and 4	1	2	3
64	Garden, corner Chauncy Street.	1 and 4	1	2	3
65	North Avenue, cor. Shepard Street.	1 and 4	1	2	3
68	North Avenue, near Railroad Bridge.	1 and 4	1	2	3
69	North Avenue, No. 4 Engine-house.	1 and 4	1	2	3
71	North Avenue, near Tannery Street.	1 and 4	1	2	3
72	Cedar Street, Hotel Building.	1 and 4	1	2	3
73	Spruce Street, near Bay State Brick-yard.	1 and 4	1	2	3
78	Concord Avenue, cor. Sparks Street.	1 and 4	1	2	3
79	Brattle, corner Sparks Street.	1 and 4	1	2	3
82	Brattle Street, cor. Elmwood Avenue.	1 and 4	1	2	3

Fire Alarm Telegraph.

Battery Station: CHURCH STREET.

Telegraph Operator.

THOMAS J. LEIGHTON.

Assistants.

GEORGE J. BLAISDELL. DAVID J. CAMPBELL.

Location of Bell Strikers.

Unitarian Church, Harvard Square	Ward One.
Methodist Church, Harvard Street	„ Two.
Unitarian Church, Third Street	„ Three.
Baptist Church, North Avenue	„ Five.

REPORT

OF

GEORGE L. CADE,

SUPERINTENDENT OF STREETS.

CITY OF CAMBRIDGE, *Dec.* 17, 1873.

To the Honorable City Council:—

The undersigned asks leave to submit for your consideration his Tenth Annual

REPORT.

Streets and Paving.

The Appropriation for Streets and Paving for the financial year ending Nov. 30, 1873, was . .	$182,000.00
Amount expended	181,998.57
	$1.43
Amount received and paid to Treasurer . . .	$2,889.93

The Appropriation for this Department has been expended as follows: —

Superintendent's salary, shovels, harnesses, horses, and incidentals	$3,605.69
Gravel and stone	12,660.31
Labor with men and teams	55,216.64
Iron-work and repairs on carts, &c.	2,405.22
Hay and grain	4,386.52
Lumber	1,101.84
Edgestone, paving, brick, &c.	99,314.11
Horse-shoeing	712.73
Hardware, &c.	436,21
New engine, boiler, mason-work, &c.	2,159.30
	$181,998.57

There have been twenty orders passed for sidewalks and paving the past year, all of which, with the exception of Bridge, Linnæan, and Pleasant Streets, have been completed at the following cost, including grading: —

On Bridge and Cambridge Streets	$72,000.46
,, Columbia Street	1,000.00
,, Chester ,,	889.28
,, Dana ,,	1,854.89
,, Ellery ,,	2,082.65
,, Forest ,,	4,262.91
,, Inman ,,	664.00
,, Green ,,	2,312.23
,, Main ,, (three orders)	4,257.96
,, Sacramento ,,	4,957.20
,, Trowbridge ,,	2,474.42
,, Western Avenue	3,123.28
,, Warland Street	800.00
,, Winsor, Market, and Columbia Streets	7,031.19
,, Pleasant Street	1,894.74
In front of Drinking Fountains	1,540.00
On Linnæan Street	1,134.71
,, Water ,,	3,766.61
	$116,046.53

I consider it my duty again to call your attention to the public necessity of making extensive improvements on River Street by the construction of at least one sidewalk on said street its entire length, say on the north-westerly side.

There is not a street on the south side of Main Street where there is so much travel, and I believe it is in the worst condition of any that runs in a southerly direction, and it must necessarily be so until the obstructions are removed, and a proper sidewalk laid.

I think I can say, without fear of contradiction, that the streets of Cambridge are in better condition, as a whole, than in any previous year. No action has been taken during the past year in relation to the lines of Brighton Street in Ward One, as was

suggested by me in last year's Report. I think that public necessity requires that the lines of said street should be straightened at least. During the past year there have been 55,520 yards of paving laid, and 33,043 feet of edgestone set. Assessments have been reported for collection to the amount of $15,669.46.

I would again call your attention to the necessity of commencing the paving of some of our principal streets. It would without doubt be a measure of true economy for the City. Main Street, especially, should be paved the coming year, at a cost of about $100,000. Additional facilities for the breaking of stone have been added this year, and give entire satisfaction.

The regular force employed by the City in the Street Department at the present time is forty-three men and twenty-four horses.

It will be impossible to estimate the amount of appropriation that will be required in this Department for the present financial year, commencing December 1, unless I know what it is proposed to do. Petitions are now in the hands of the Committee on Roads and Bridges for sidewalks on several streets, which I estimate will cost, including the cost of a sidewalk on one side of River Street to Blackstone Street, not less than $26,000.00, including grading.

If these several orders are passed, and an order for the paving of Main Street as suggested, an appropriation of not less than two hundred thousand dollars will be required for Streets and Paving for the year 1874.

I cannot close without suggesting that some stringent ordinance be passed, to prevent the streets of the city from being left in such dangerous condition as they often are after the digging up of the same for sewers and drains, water and gas pipes. With proper care and attention they can be left safe and convenient for public travel.

The following streets have been graded during the past year: —

Antrim Street, from Broadway to Cambridge.
Allston ,, partially.
Auburn ,, ,,
Austin ,, ,,

Baldwin Street, partially.
Brattle ,, ,,
Brewery ,, in Washington Street District, its whole length.
Broadway ,, partially.
Brookline ,, ,,
Cambridge Street ,,
Charles ,, from Third to Fifth.
Charles River Street, partially.
Church Street, its whole length.
Clark ,, partially.
Columbia ,, ,,
Concord Avenue ,,
Cottage Street, from Pearl to Magazine.
Dana ,, partially.
De Wolf ,, ,,
Dublin ,, ,,
Ellery ,, ,,
Elm ,, from Harvard to Cambridge.
Fayerweather Street, partially.
Fifth Street, from Charles to Spring.
,, ,, ,, Gore to Winter.
Forest ,, ,, North Avenue to Oxford.
Fourth ,, partially.
Franklin Street, from Sidney to Brookline.
,, ,, ,, Bay to Putnam.
Front ,, partially.
Garden ,, ,,
Gore ,, ,,
Green ,, from Bay to Putnam.
Hancock ,, partially.
Harrison ,, in the Washington St. District, its whole length.
Harvard ,, partially.
Hastings ,, in the Washington St. Dist., its whole length.
Highland ,, partially.
Holyoke ,, ,,
Inman ,, ,,
Kent ,, now Putnam Avenue, its whole length.
Kirkland ,, partially.

Lee Street, partially.
Lincoln ,, from Elm Street to Webster Avenue.
Linnæan ,, partially.
Magazine ,, ,,
Main ,, its whole length.
Market ,, partially.
Moore ,, in the Washington St. Dist., from Main to Harvard.
Mt. Auburn Street, partially.
Norfolk Street, partially.
North Avenue ,,
Oxford Street ,,
Pearl ,, ,,
Portland ,, from Main to Cambridge.
Prospect ,, partially.
Putnam ,, now Putnam Avenue, partially.
River ,, partially.
Sacramento Street, from North Avenue to the Somerville Line.
School Street, partially.
Second ,, ,,
Sixth ,, ,,
South ,, ,,
Spring ,, ,,
Spruce ,, ,,
Suffolk ,, its whole length.
Third ,, partially.
Trowbridge Street, from Main Street to Broadway.
Walden Street, partially.
Walnut ,, now Putnam Avenue, partially.
Washington Street, partially.
Webster Avenue, partially.
Western ,, ,,
Winsor Street ,,
Winter ,, ,,
Worcester Street ,,

The names of the following streets and places have been changed the past year : —

Chestnut Street in Ward One to Charles River Street, and again changed to Plympton Street.
Murdock Place (from 245 Mount Auburn St.) to Camden Place.
Norton Place to Curve Place.
Rice ,, to Maynard Place.
Willard ,, to Foster Place.
Highland Street to High, and again to Highland Street.
Irving Place to Brown Street.
Baldwin Court to Nichols Place.
Nichols Place (from 35 Baldwin St.) changed to Emmons Place.
Nichols Place (from 21 Baldwin Street).
Everett Place to Ash Street.
Gardner Court, Ward One, to Nutting Place.
Munro Street to James Street.
Preston ,, to Trowbridge Street.
Court ,, to Third Street.
Livermore Street to Union Street.
Chestnut Place to Percy Place.
Reed's Lane to Derby Lane.
Lambert Street to Carson Street.
Franklin Alley to Daily Alley.
Munroe Alley to Walker Place.
Brooks Street to Lawrence Street.
East Perry Street to Decatur Street.
,, ,, ,, Court to Decatur Court.
Holly Street to Brooks Street.
,, Place to ,, Place.
Clark's ,, to Cherry Court.
Dana Court to Central Place.
State Street, from Main to Front, changed to Front Street.
Somerset Place to Emerson Place, and afterwards the name Emerson Place was abolished.
Murdock Court to Hews Court.
Washington Court to Hayes Court.
Short Street and Fremont Street to Pond Street, afterwards changed to Fairmont Street.

Porter Street, Ward Four, to Somerset Street.
Webster Street to Upton Street.
Cottage ,, Ward Five, to White Street.
Harrison Court to Wright Street.
Walnut Avenue to Shawmut Avenue.
Putnam Street to Putnam Avenue.
Kent ,, to ,, ,,
Walnut ,, to ,, ,,

Since my last Annual Report the following streets have been widened or extended: —

Name.	Date.	Width.	At what Portion.	Cost, including Grading.
	1873.	Feet.		
Austin . .	Sept. 24	49	South side, at junction of Main St.	$500.00
,, . .	Jan. 3	49	North side, from Main to School St.	1,478.58
Green . . .	Nov. 4	40	From Pleasant to Bay Street.	8,286.50
,, . . .	Oct. 27	40	,, Brookline to Pearl Street.	7,072.90
Hastings .	July 9	30	,, Moore Street to G. R. R.	250.00
Kent . . .	May 9	50	,, River St. to Western Avenue, Grading only.	500.00
Lincoln . .	Sept. 19	40	From Elm St. to Webster Avenue.	1,696.50
	1872.			
Norfolk . .	Dec. 20	40	East side, north of Washington St.	160.00
	1873.			
Prospect .	Oct. 15	50	From Main to Austin Street.	7,096.75
Washington	June 17	40	,, Moore to Winsor Street.	2,766.63
Worcester	Sept. 19	32	,, Norfolk to Columbia Street.	607.87
Walnut . .	April 5	50	,, River to Pleasant Street.	8,752.60
Watson . .	Dec. 6	40	,, Pearl to Brookline Street.	2,114.40
				$41,282.73

The following streets have been accepted, laid out, and established: —

Name.	Date.	Width.	For what Distance.
	1873.	Feet.	
Antrim	July 24	40	Broadway to Cambridge.
Coggswell Avenue	June 5	40	North Avenue to the Fitchburg Railroad.
Cottage	July 24	40	Magazine to Pearl Street.
Charles	July 24	50	Third to Fifth Street.
Elm	May 9	40	Harvard to Cambridge Street.
Franklin	Oct. 30	40	Brookline to Sidney Street.
Fifth	July 24	50	Charles to Spring Street.
,, ...	July 24	50	Gore to Winter Street.

Name.	Date.	Width.	For what Distance.
Florence	Dec.	40	Magazine to Pleasant Street.
Green	Oct. 27	40	Brookline to Pearl Street.
,, ...	Nov. 4	40	Pleasant to Bay Street.
Hastings	July 9	30	Moore to Grand Junction Railroad.
Harrison	May 9	30	Main to Washington Street.
Kent	May 9	50	River to Western Avenue.
Lincoln	Sept. 19	40	Elm to Webster Avenue.
Lawrence . . .	Dec.	40	Magazine to Pearl Street.
Mead	June 5	40	Walden to Coggswell Avenue.
Mellen	July 24	50	North Avenue to Oxford Street.
Norfolk	June 23	40	Hampshire to Cambridge Street.
Pleasant	Oct. 22	40	River to Florence Street.
Perry	Dec.	40	Magazine to Pearl Street.
Sparks	July 24	40	Mt. Auburn to Brattle Street.
Sidney	Oct.	40	Front to Auburn Street.
Trowbridge . . .	June 2	40	Harvard to Broadway.
Upton	Oct. 1	40	Magazine to Pleasant Street.
Wendell	June 2	50	North Avenue to Oxford Street.
Walnut	April 5	50	River to Pleasant Street.
Watson	Dec. 6	40	Pearl to Brookline Street.

Schedule of Property.

Twenty-two horses	$8,000.00
Twenty-four cart and chain harnesses	1,000.00
Fifteen carts	1,500.00
Two express wagons and harnesses	250.00
One set runners	75.00
One plough	5.00
Utensils for work on streets, &c.	300.00
Stable furniture	50.00
Stone-crusher and steam-engine, &c.	4,000.00
Ten snow-ploughs	200.00
Three stone-rollers	950.00
Four sleds	300.00
	$16,630.00

Bridges.

The appropriation for bridges for the financial year ending Nov. 30, 1873, was	$10,000.00
Amount expended	9,547.52
Balance unexpended	$452.48

The following is a list of the several bridges, exclusive of the West Boston and Canal Bridges, on which repairs have been made during the past year : —

Prison Point Bridge.
Third Street ,,
Sixth ,, ,,
Brookline Bridge.
River Street Bridge.
Western Avenue Bridge.
Cambridge Great ,,
Fitchburg Railroad Bridge, North Avenue.

Most of these will require considerable repairs in the spring, with the exception of the Third and Sixth Street Bridges, which have been partially rebuilt at an expense of about eight thousand dollars ($8,000).

No action has as yet been taken by either Charlestown or Cambridge toward the rebuilding of Prison Point Bridge, in compliance with the Act of the Legislature.

Owing to the filling up of the flats upon both sides of this Bridge, it will be necessary to make some provision for surface drainage, and then it will be economy to pave the same.

An appropriation of not less than $12,000.00 will, in my opinion, be required for bridges, to meet the cost of ordinary repairs for 1874.

Respectfully submitted.

GEORGE L. CADE,
Superintendent of Streets.

REPORT

OF

THE CHIEF OF POLICE.

OFFICE OF THE CHIEF OF POLICE,
CAMBRIDGE, *Dec.* 1873.

To the Honorable City Council of Cambridge: —

GENTLEMEN, — I have the honor to submit the Annual Report of the doings of the Police Department for the year ending Nov. 30, 1873: —

Whole number of arrests		1,538
Males	1,353	
Females	185	
Residents	1,239	
Non-residents	299	
Adults	1,291	
Minors	247	

Food and lodgings have been furnished at the several station-houses to 1,919 persons, of whom 1,728 were males, and 191 were females.

Offences.

Assault and battery	215	Disturbance of peace	53
Assault on officers	19	Disturbing public meeting	6
Attempt to rescue prisoner	1	Escaped prisoners	4
Bastardy	6	Embezzlement	2
Breaking and entering	25	Evading car fare	4
Carrying concealed weapons	1	Felonious assault	7
Cruelty to animals	3	Forgery	1
Conspiracy to defraud	1	Hotel swindler	1
Common drunkards	17	Having counterfeit money in possession	1
Common railer and brawler	1	Habitual absentees from school	21
Drunkenness	626		

Highway robbery	1	Robbing birds' nests	3
Indecent exposure	2	Receiving stolen goods	5
Insanity	25	Refusing assistance to officers	2
Illegal transportation of intoxicating liquor	17	Selling intoxicating liquor	6
Incendiary	1	Selling adulterated milk	1
Keeping dog without license	5	Surety of the peace	38
Lewd and lascivious persons	1	Suspicious persons	16
Larceny	141	Stubborn children	2
Larceny from fire	1	Setting bonfires	2
Maintaining liquor nuisance	2	Surrendered by bail	2
Malicious mischief	48	Sending threatening letter	1
Murder	1	Uttering counterfeit money	1
Night walking	2	Vagrancy	30
Obtaining goods by false pretences	3	Violation of city ordinances	78
Peddling without license	5	Violation of the Lord's day	67
Perjury	1	Wilful trespass	13

The above is but a small portion of the actual work performed by the Department, as they are expected to be on the look out, and report to the proper persons any defects in streets, sidewalks, water or gas pipes, cesspools, street lamps, or any thing of a nature to compromise the public safety. Stolen property is to be looked after, disturbances suppressed, lost children to be taken care of and returned to their parents. Intoxicated persons who are peaceably disposed are to be assisted home. And the general sanitary condition of the city is under the supervision of the health officers acting as agents of the Board of Health.

The prevalence of the small-pox as an epidemic in our city during the first five months of the municipal year, and the fear entertained by many of our physicians and others that that dread scourge, the Asiatic cholera, might visit us later in the season, made it a necessity that two men of the regular force should be detailed exclusively for duty as agents of the Board of Health for some eight or nine months. Their services, particularly during the prevalence of the small-pox, cannot be too highly estimated. During this term their places were filled by special officers, and the expenses of this Department were increased by some fifteen hundred dollars.

A partial record of the work of the Department, as spoken of above, has been kept at the different stations, and is as follows: —

Amount of property reported stolen	$8,364.00
Amount of stolen property recovered	$7,007.00
Alarms of fire given by officers	27
Accidents reported	39
Buildings found open and secured	75
Dead bodies found	13
Defective gas and water pipes reported	41
Defective hydrants, cesspools, &c.	17
Defects in streets and sidewalks	379
Fires extinguished without alarm	9
Intoxicated persons assisted home	143
Lost children restored to parents	81
Stray teams taken care of	113

Total cost of the Department for the year: —

Appropriation	$64,000.00

Expenditures: —

Pay of Chief	$2,000.00
Sundry officers' services	56,224.00
Incidental expenses, including care and repair of station-houses and police-court room, supplies, coal, gas, horse-keeping, horse-shoeing, new boat, oars, grapnels, and medical attendance	3,839.59
Total	$62,063.59
Amount paid into the treasury on account of services on warrants, witness-fees of officers, &c.	3,964.20
Balance, showing actual cost	$58,099.39

During the last year the Department comprised fifty officers, who have done duty as follows: one chief, three day captains, one night captain, fourteen day officers, five truant officers, three night-station officers, and twenty-three night-patrol officers. The day force is divided into two divisions, one of which goes on duty at 4 A.M., and remains until 12½ noon, when the second division relieves them, and is in turn relieved by the night patrol at 9 P.M., who remain on duty until 4 A.M. By this arrangement the whole time is covered; but during the hours from 4 to 7 A.M., and from

6 to 9 P.M., which at this season of the year are hours of darkness, there are but seven men on duty throughout the city. The hours from 6 to 9 P.M. are also hours of leisure to nearly all classes, and our streets are filled with young and reckless persons, and many acts of mischief and petty depredations are committed, which, though slight in themselves, are a source of constant annoyance to all good citizens. Complaints are numerous at all of the stations, and citizens ask, "Where are the police?" If the facts are explained to them, the invariable reply is, "We must have more men."

The hours of the morning are, to a great extent, free from the petty annoyances mentioned above; but what better opportunity can the skilled burglar ask in which to ply his vocation than a city of the size of the City of Cambridge, with only seven men on guard in the darkness? The only proper remedy for this would, in my judgment, be an increase of the force sufficiently to allow two divisions of the night patrol, the first of which should go on duty at 6 P.M. and remain until 1 A.M., when the second should relieve them, and remain until relieved by the day force at 8 A.M., the day force to be on duty until 6 P.M. To form two divisions of twenty-three men each, and a day force of nine men, would require an addition of ten men to the present force.

This would of course increase the expense of the Department about $11,000, and in my opinion no more judicious expenditure could be made.

By authority of an act passed by the Legislature of 1873, the School Committee, at their regular meeting held November 20, appointed five men as truant officers, the appointment to take effect Dec. 1, 1873.

Those officers of the police force who were appointed to these positions have tendered their resignations as police officers, thus discontinuing the performance of duty as truant officers by members of the police force.

During the year a boat and three sets of grappling irons have been added to the equipments of the Department, thus supplying a much-felt want.

The station-houses of the city are situated as follows: No. One on Church Street, Old Cambridge; No. Two under the City Hall,

Cambridgeport; No. Three on Fourth Street, East Cambridge; and No. Five at North Cambridge. These are in very good condition, with the exception of the one under the City Hall, which is at times damp, and is said to be unhealthy. The new building in process of erection at the junction of Western Avenue and Green Street, which will be ready for occupancy some time during the coming year, will be a credit to the city, and give better accommodations to the police force and all other parties interested. In addition to these buildings, there are in the second district two wooden buildings for temporary lock-ups, which are in good condition and a great convenience to the officers.

I cannot refrain from mentioning in this Report, as a need of the Department, the introduction of a dial telegraph to connect the several stations and the City Hall. This would furnish ready means of communication from one end of the city to the other. Should any emergency arise, rendering it necessary to summon assistance from one district to another, much valuable time would be lost for want of this simple arrangement, which, I am informed, can be constructed for less than $2,500.

The purchase of a pair of horses will also be a necessity during the coming year, the one now belonging to this Department being somewhat in years and slightly lame. During the last year we have been dependent on the courtesy of the Chief Engineer of the Fire Department, who has at times kindly loaned us a condemned animal belonging to his department, and at other times we have hired horses. As it is a necessity that we should use a pair of horses every day, and as the horses of this Department are a source of income to the city, it would seem to be cheaper to own a pair than to hire.

The city during the last year has enjoyed a remarkable degree of peace and tranquillity, — remarkable when our contiguity to other (and in one case larger) cities than ours is considered, as it must be remembered that our worst criminals are in most cases non-residents.

The number of arrests was 149 less than the preceding year. A large proportion of this diminution is in the arrests for drunkenness, and is owing to the fact that most of the officers have been led to believe that in most cases the fine imposed on a man for

this offence is bread taken from the mouths of his wife and children.

During the last year an association has been organized among the members of this Department for the purposes of mutual aid and relief in cases of sickness or injury. A large proportion of the members of the Department have joined the association. The liberal subscriptions of friends, and the proceeds of a ball given, assured its financial success. The meetings of this association have brought the members of the force more together, and the interchange of sentiments has had a tendency to promote harmony throughout the Department.

Previous to the annual thanksgiving holiday, an appeal was made by the Mayor to the wealthy and charitably disposed in behalf of the suffering and destitute, with a notice that any contributions left at any of the different stations would be taken charge of by the police and distributed as judiciously as possible. In answer to this appeal, the sum of three dollars was received at Station No. One, and was expended to the best advantage under the personal supervision of Captain Ames. It is supposed that the charities of the wealthy were expended on parties of their own personal acquaintance.

During the last year the Department has lost by death two faithful and efficient officers, Mr. John S. Milliken of Station One, and Mr. Henry Kinsley of Station Three. Mr. Milliken was in the prime of life as far as years go, but had been a sufferer from pulmonary disease for some time. His sufferings were ended by death April 16. Mr. Kinsley was an older man and older officer. During his sixteen years of service in the city, he had endeared himself to his associates by his readiness to advise and assist all, and to any one young in the business the advice of an older officer is oftentimes invaluable. Mr. Kinsley had also that rare tact as an officer which endeared him to those with whom he was brought in contact in the way of business. It was a noticeable fact at his funeral that tears were shed by those whom he had arrested time and again. I know of no prouder tribute which could have been given to his memory than this.

The following named officers have resigned during the year last past: Abel A. Hildreth, Melancthon W. Clark, Thomas H.

Luey, Amori Benson, Jr., Charles W. Ingalls, Moses M. Child, George S. Dudley, Mark J. Folsom. Most of these resignations were voluntary and were for the purpose of accepting better situations, while some were for the benefit of the Department. The vacancies have been filled by what were thought to be the best men offering. Time and observation alone can test the correctness of this opinion. Should they fail to show the necessary requisites to make good officers, I shall not hesitate to make such report.

The general standard of the force has not deteriorated during the last year; and while some officers may have one failing, and some another, let us remember that if the whole community was searched through it would be difficult to find one man who should combine all the moral, mental, and physical qualities which we can imagine the model police officer should possess.

My thanks are due to the members of the State force stationed in our midst for their assistance cordially given at any time when opportunity offered.

In the performance of my duties I have been ably supported by the officers and members of the force under my command, and I hope that our efforts have been satisfactory to the community in general.

Respectfully submitted.

GEORGE H. COPELAND,
Chief of Police.

REPORT

OF

ROLAND LITCHFIELD,

SUPERINTENDENT OF LAMPS.

To the Honorable City Council of Cambridge: —

GENTLEMEN, — I herewith submit my Annual Report in relation to the Lamp Department.

The number of Street Lamps is as follows: —

District One,	256 gas,	5 fluid.	
District Two,	262 gas,	18 fluid.	
District Three,	94 gas,	12 fluid.	
	612 gas,	35 fluid.	Total . . 647

Twenty of the above lamps were added during the year.

The following is an exhibit of the expenses of the Street Lamps for the year: —

For gas	$9,748.65
Care of lamps and lighting	4,291,17
Posts, lanterns, and repairs	1,809,99
Fluid, matches, &c.	394.20
Superintendent's salary	400.00
Other expenses	431.30
	$17,075.31

The average cost of each lamp burning gas through the year was $7\frac{1}{2}$ cents per night, and the cost of each lamp burning fluid for the same time was 2 cents per night.

Five men are employed to light the lamps and keep the lanterns clean, and they are paid fifty cents per month for each lamp; and two shillings per month extra for each lamp that is left burning all night.

The violation of Section 24 of Chapter 25 of the Revised Ordinances leads to the destruction of many lamp-posts, the expense of which falls upon the city.

Respectfully submitted.

ROLAND LITCHFIELD,

Superintendent of Lamps.

CAMBRIDGE, *Dec.* 1, 1873.

REPORT

OF

JOSIAH G. CHASE,

CITY ENGINEER.

CITY OF CAMBRIDGE, OFFICE OF CITY ENGINEER,
December 23, 1873.

To the Honorable the City Council: —

GENTLEMEN, — I have the honor to present to you my Report for the year ending Nov. 30, 1873, as required by the eighth section of the ordinance relating to the Department of City Engineering.

SEWERS.

In obedience to orders passed by the City Council, the following Sewers have been constructed the past year and work connected therewith performed, as exhibited in the following table: —

DETAILED STATEMENT OF SEWERS BUILT FROM DEC. 1, 1872, TO DEC. 1, 1873.

Location.			Construction.							Total cost.
In what Street.	From	To	Contractor.	Material.	Size in inches.	Catch Basins.	Man Holes.	Inlets.	Length in feet.	
Allston.	Pearl St.	near Magazine.	Samuel Palmer.	Cement pipe.	12	1		16	381	$612.75
Appian Way.	Hilliard St.	near Garden.	Samuel Palmer.	Cement pipe.	15 & 12	2	1	20	505	1,054.25
Beaver.	Cowperthwaite St.	near Flagg.	Samuel Palmer.	Cement pipe.	12			12	337.3	433.25
Boardman.	Harvard St.	near Broadway.	J. Horigan, Foreman	Cement pipe.	12	1		4	112	155.95
Brewery.	Harvard St.	Washington.	S. H. Tarbell.	Brick.	42 x 48			*See*	Harvard St.	sewer.
Brewery.	Washington St.	Main.	Samuel Palmer.	Brick.	36 x 36			*See*	Main St.	sewer.
Brattle.	near Appleton St.	the west.	Samuel Palmer.	Cement pipe.	15			5	207.8	422.50
Brighton.	Eliot St.	north and south.	H. H. Pike.	Cement pipe.	15&12			*See*	Eliot St.	sewer.
Carver.	Sacramento St.	Wendell.	Day & Collins.	Cement pipe.	12	1		21	448.8	645.75
Cedar.	North Avenue	near Spruce.	Day & Collins.	Cement pipe.	18&12	4	1	22	1200.7	3,941.55
Cottage.	Pearl St.	near Magazine.	J Horigan, Foreman.	Cement pipe.	12			21	367.2	425.60
Columbia.	Hampshire St.	the south.	H. H. Pike.	Cement pipe.	12			14	248.75	337.37
Concord Ave.	Alewife Brook.	Lakeview Ave.	O. P. Roberts.	Brick & wood.	40 x 42	2	4	6	2,733.75	18,867.70
Crescent.	Sacramento St.	the north.	J. Horigan, Foreman.	Cement pipe.	12			8	240.5	259.50
*De Wolf.	Cowperthwaite St.	the south.	J. Horigan, Foreman.	Cement pipe.	12			10	383.6	564.20
Dublin.	Spruce St.	the south.	Day & Collins.	Brick.	36 x 42			*See*	Spruce St.	sewer.
Dyke.	Cowperthwaite St.	Charles River St.	J. J. Harlow.	Wood.	30 x 30				390.75	500.00
East.	Bridge St.	North St.	Samuel Palmer.	Cement pipe.	15		1	26	471.08	944.35
Eighth.	Otis St.	near Cambridge.	J. Horigan, Foreman.	Cement pipe.	12			8	156	163 85
Eliot.	Murray St.	Brighton St.	H. H. Pike.	Cement pipe.	15	4	1	47	1,021.5	2,744.50
Ellery.	Main St.	near Harvard.	Day & Collins.	Cement pipe.	12			15	470.5	721.75
Erie	Pearl St.	near Magazine.	Samuel Palmer.	Cement pipe.	12			13	348	448.00
†Fairfield.			J. J. Harlow,	Wood.	20 x 24				125	258.00
Fairmont.	Pleasant St.	near Magazine.	Day & Collins.	Cement pipe	12			19	367.5	607.00
Fairmont.	Pleasant St.	River St.	Day & Collins.	Brick.	24 x 30			27	504.8	uncompleted
Franklin.	Pearl St.	near Magazine.	Samuel Palmer.	Cement pipe.	12	2		18	370.9	700.50
Franklin.	Sidney St.	near Brookline.	Day & Collins.	Cement pipe.	12			20	476.7	615 93
Frank.	North Ave.	the north.	Day & Collins.	Cement pipe.	12			11	450	692.00
Gardner.	Tremont St.	near Prospect.	Samuel Palmer	Cement pipe.	12	1		9	266	377.10
Gore.	Gore St.	B. & A. R.R.	H. H. Pike.	Wood.	12 x 22				133.5	400.50
Gore.	Bridge St.	near Third.	Samuel Palmer.	Cement pipe.	12			25	461	670.90
‡Green.	Cross St.	near Pleasant.	J. Horigan, Foreman.	Cement pipe.	15&12			71	992.6	
Harvard.	Sixth St.	Columbia.	S. H. Tarbell.	Brick.	66 x 60 32 x 36	33	10	198	4,058.25	44,877.25
Hastings.	Moore St.	near east end of	Samuel Palmer.	Cement pipe.	15&12		1	58	1,826.14	1,895.59
Hastings.	Extended east.	from last.	O. P. Roberts.	Cement pipe.	12			4	55.5	72.98

Holyoke.	Mill St.	the north.	H H. Pike.	Cement pipe.	12	2		*See*	Mill Street	sewer.
§Kent.	Western Ave.	the east.	J. Horigan, Foreman.	Cement pipe.	12			20	398	
Lopez.	Brookline St.	near Pearl.	J. Horigan, Foreman.	Cement pipe	12			22	423.50	490.40
Main.	Brewery St.	Columbia.	Samuel Palmer.	Brick.	36	6	6	150	2,247.92	15,029.30
Mill.	Charles River St.	Holyoke.	H. H. Pike.	Cement pipe.	12			39	655	1,183.25
North.	East St.	the west.	Samuel Palmer.	Cement pipe.	12			*See*	East Street	sewer.
Pioneer.	Dock St.	Sixth.	Samuel Palmer.	Wood.	16				190	231 31
‖ Pleasant.	the River	River St.	Paul & Roberts.	Brick & pipe.	32 x 36 / 12&18	18	6	100	2,773	8,003.02
Pleasant Pl.	Pleasant St.	the east.	Paul & Roberts.	Cement pipe.	12	1		21	357.5	587.35
Prescott.	near Harvard St.	the north.	Day & Collins.	Cement pipe.	12			3	150	174.30
Prospect.	Cambridge St.	Clary.	Day & Collins.	Cement pipe.	12			13	237	277.05
Prospect.	Clary St.	Houghton.	J. Horigan, Foreman.	Cement pipe.	12			6	148.5	186.00
¶Sidney.			J. J. Harlow.	Wood.	24 x 30				95	290.44
**Sixth.	Broad Canal.	Harvard.	S. H. Tarbell.	Brick & wood.	8 x 9.4			*See*	Harvard St.	sewer.
Somerset.	Pleasant St.	near Putnam Ave.	H H. Pike.	Cement pipe.	12			18	299	421.65
South.	Brighton St.	near Dunster.	H. H. Pike.	Cement pipe	12			*See*	Eliot Street	sewer.
Spruce.	Dublin St.	Cedar.	Day & Collins.	Cement pipe.	20		1	32	498	uncompleted
††Spruce.	Alewife Brook	Dublin St.	Day & Collins.	Brick.	48 x 48	11	9	207	4,242.75	23,894.24
Vassal Lane.	Concord Ave.	Lake View Ave.	O. P. Roberts.	Brick & wood.	40 x 42			*See*	Concord Av.	sewer.
Village.	Front St.	State.	H. H. Pike.	Cement pipe.	12			7	206.3	264.50
Vine.	Fifth St.	near Fourth.	J. Horigan, Foreman.	Cement pipe.	12			21	348.5	448.50
Webster Ave.	Hampshire St.	Plymouth.	H. H Pike.	Cement pipe.	18	3	2	52	835.35	2,521.54
Webster Ave.	Cambridge St.	near Winsor.	H. H. Pike	Cement pipe	12			14	325.5	420.87
Wendell.	Carver St.	the west.	Day & Collins.	Cement pipe.	12			*See*	Carver St.	sewer.
Western Ave.	Pleasant St.	near Green.	J. Horigan, Foreman.	Cement pipe.	12			13	357	465.30

SEWERS CONSTRUCTED AT PRIVATE EXPENSE UNDER DIRECTION OF CITY ENGINEER.

Belmont.	Cedar St.	the west.			12				262.4	
Chestnut.	Pleasant St.	the east.			12				425	
Erie.	Pleasant St.	the west.			12				273	
New Street.	Kirkland St.	the north.			12				311	
Prince.	Pleasant St.	the east.			10				164	
Water Works.	at new pumping	house.			12				555	
								Totals. . .	36,890.34	$137,216.62

* Connecting outlets Cowperthwaite and De Wolf Streets sewers with Charles River Street outlet.
† Culvert under street, and cleaning old watercourse by F. R.R., about 1,000 feet in length.
‡ Paid from Low Lands appropriation.
§ Now Putnam Avenue. Not paid till after Dec. 1, 1873.
** Two tide-gates.
‖ Two tide-gates.
¶ Culvert under street.
†† Length and cost include portion in Dublin Street.

The construction of some of the principal sewers may be more fully described : —

Cedar Street. — From North Avenue, for the first 945 feet of its length, was laid with 18-inch round cement pipe; and the remainder, 255.7 feet, with 12-inch round pipe.

Concord Avenue and Vassal Lane. — This sewer is laid from Alewife Brook to Lakeview and Lexington Avenues, terminating each side of the Cambridge Water Works' new pumping-house. The sewer is built with a timber foundation, and brick arch of two rings of brick. Interior dimensions, $3' 6'' \times 3' 4''$.

In building this sewer, it became necessary to rebuild the old decayed wood culvert under Concord Avenue, on the line dividing Belmont and Cambridge, which was done by the substitution of stone in a durable, permanent manner; said culvert, as rebuilt, being 82.75 feet in length.

To the total cost of this work given above is to be added the balance of the appropriation made for the purpose of the improvement, $11,132.30, for covering and protecting said sewer work, grading and improving Concord Avenue and Vassal Lane, and in connection with work and grading ordered by the Water Board, not yet completed or advanced sufficiently far to determine the proportion of cost to be defrayed by them.

In my last Report, reference was made to the necessity of improving Alewife Brook as an outlet for drainage in this section; and I can only renew the suggestions made therein, by saying that the need for such action has increased, from the advance thus far made in the right direction, so as to have become absolutely imperative.

East Street. — From Bridge Street, a 15-inch round cement pipe is laid, 256.75 feet in length, terminating with a man-hole at North Street. Thence in North Street a 12-inch pipe is laid.

Green Street. — From Cross Street the first 688.8 feet is built of 15-inch round cement pipe; and the remainder, 294.8 feet, of 12-inch pipe. The cost is charged to appropriation for filling Low Lands.

Harvard Street. — The construction of this sewer is as follows : —

From Columbia Street to Brewery Street, 2,006.55 feet is built

with a single ring of brick, and is 32″ × 36″ interior diameter. The Branch in Brewery Street, from Harvard Street to Washington Street, where it intercepts and receives the sewerage of said street, is 3′ 6″ × 4′ interior diameter, built of a double ring of brick resting upon a moulded invert of cement, and is 362.75 feet long.

From Brewery Street to Sixth Street, 982 feet in length, it is 5′ × 5′ 6″ interior diameter, built of two rings of common brick, with a foundation prepared as the Brewery Street branch. In Sixth Street, from Harvard Street to the gate-chamber near Broad Canal, 622.25 feet in length, the sewer is 8′ × 9′ 4″ interior diameter, built of three rings of common brick or a foot wall, resting upon a timber foundation, and in form nearly an inverted U, as shown on accompanying plate. From the gate-chamber to Broad Canal, the outlet is 48″ × 48″ in the clear, and built with timber 25.5 feet in length. The gate-chamber contains a double set of self-acting tide-gates. In connection with the above sewers also, there have been built ten man-holes, thirty-three catch-basins, and 198 connecting inlets of sundry sizes.

A payment of $6,000 toward the construction of this work was made from the appropriations of the preceding year and the balance of cost this year. Eight hundred feet in length was built last year, and the remainder the present season. Of its full cost, the sum of $43,616 was paid from the appropriation for the improvement of the Washington Street District, and $7,261.25 from appropriation for Sewers and Drains.

Main Street. — Or the sewer from Washington Street, in Brewery Street and Main, to Columbia Street, where it receives the old drain in the latter street, is 3 feet in interior diameter, built of a single ring of common brick, springing from a cement invert which rests upon 3-inch plank placed longitudinally.

The quicksands encountered in the construction of this sewer, with the slight inclination given it, $\frac{6}{100}$ of a foot per 100 feet, rendered the adoption of this plan requisite to insure satisfactory results, as in the Spruce Street sewer now being built, and other sewers of recent construction where similar formations of soil have been encountered.

Pleasant Street. — This sewer was in process of construc-

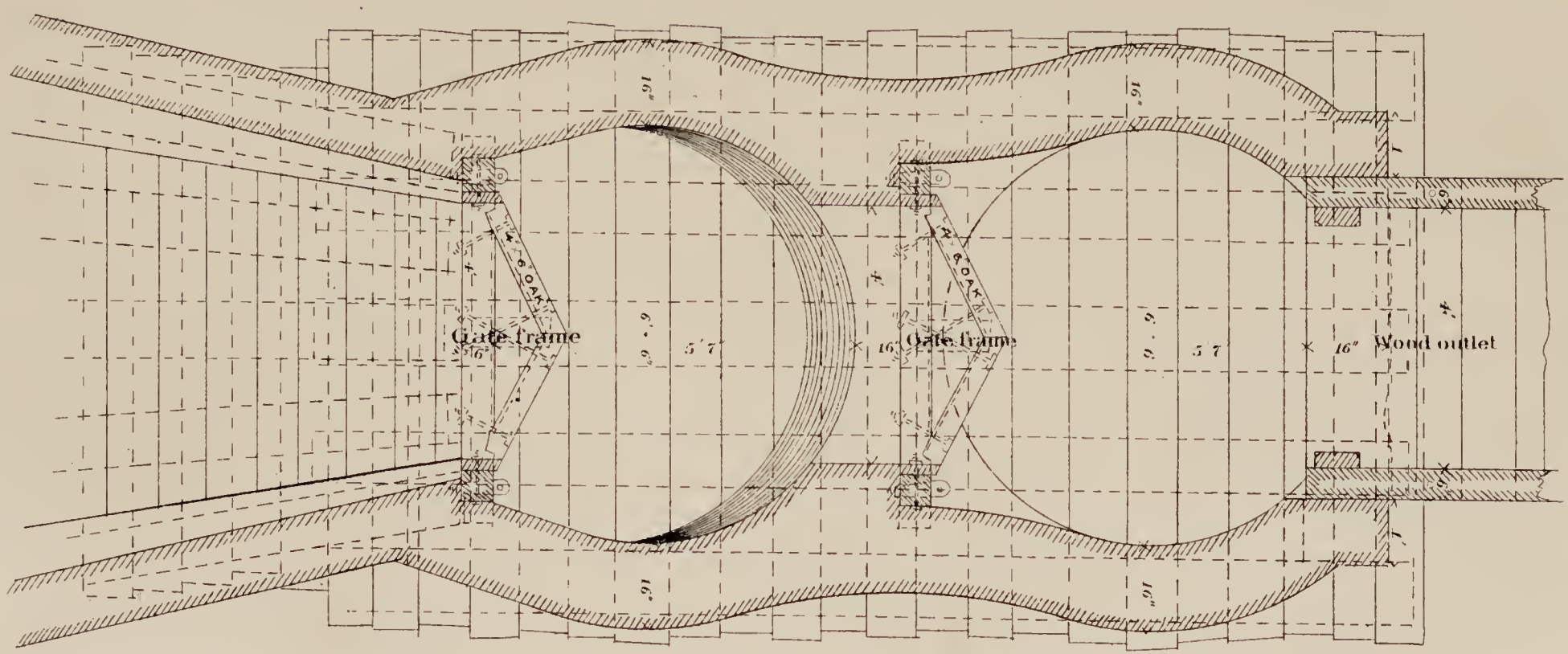
tion at the date of my last annual Report, and is therein described. Its completion was effected in April last, by laying 719 feet of 15-inch oval cement pipe and 252 feet of 12-inch round cement pipe.

Spruce Street. — A sewer in said street, from the Arlington Branch Railroad ditch (emptying into Alewife Brook), to and through Dublin Street, was commenced on the fifteenth day of July last; but owing to the depth required for said sewer, the quick-sands and treacherous foundations encountered, progress has necessarily been slow, and the work, in an unfinished condition, is closed for the season. The same is to be resumed in the coming spring. Upon its completion, a description will be presented in detail. On the 30th of November, there had been built 3,558.25 feet of sewer, 48″ × 48″ interior diameter, built of two rings of brick; 294 feet, 42″ × 36″, built of one ring of brick; and 390.50 feet, 40″ × 36″, one ring. Payments had been made at the close of the financial year to the amount already given.

Gore Street. — A connection of the Gore Street sewer has been made with the Ninth Street sewer, so that its drainage is now diverted from the Miller's River Basin. Similar provision must soon be made for the Fifth Street sewer, either by a drain in Fourth Street and rebuilding in Winter Street, or by some other plan, to secure an outlet when the basin where it empties is filled, which filling is now covered by a contract ensuring completion Jan. 1, 1875.

Bridge Street Sewer. — On the 27th day of October last, a contract was made with Mr. O. P. Roberts, of Chelsea, for the construction of the sewer in Bridge Street, as provided under Chapter 304 of the Statutes of Massachusetts, for the year 1873. The Committee on Sewers and Drains, owing to the lateness of the season, deemed it advisable, after consultation with the contractor, that work should not be commenced till the opening of the coming spring. A commencement will be made at as early a moment next season as the weather will permit. By the terms of contract, the sewer is to be completed on or before the first day of January, 1875.

Plans and profiles of all the above sewers have been completed in detail for assessments and for record, from surveys made and fully prepared in this office.



HORIZONTAL SECTION OF TIDE GATE CHAMBER

SIXTH ST. SEWER.

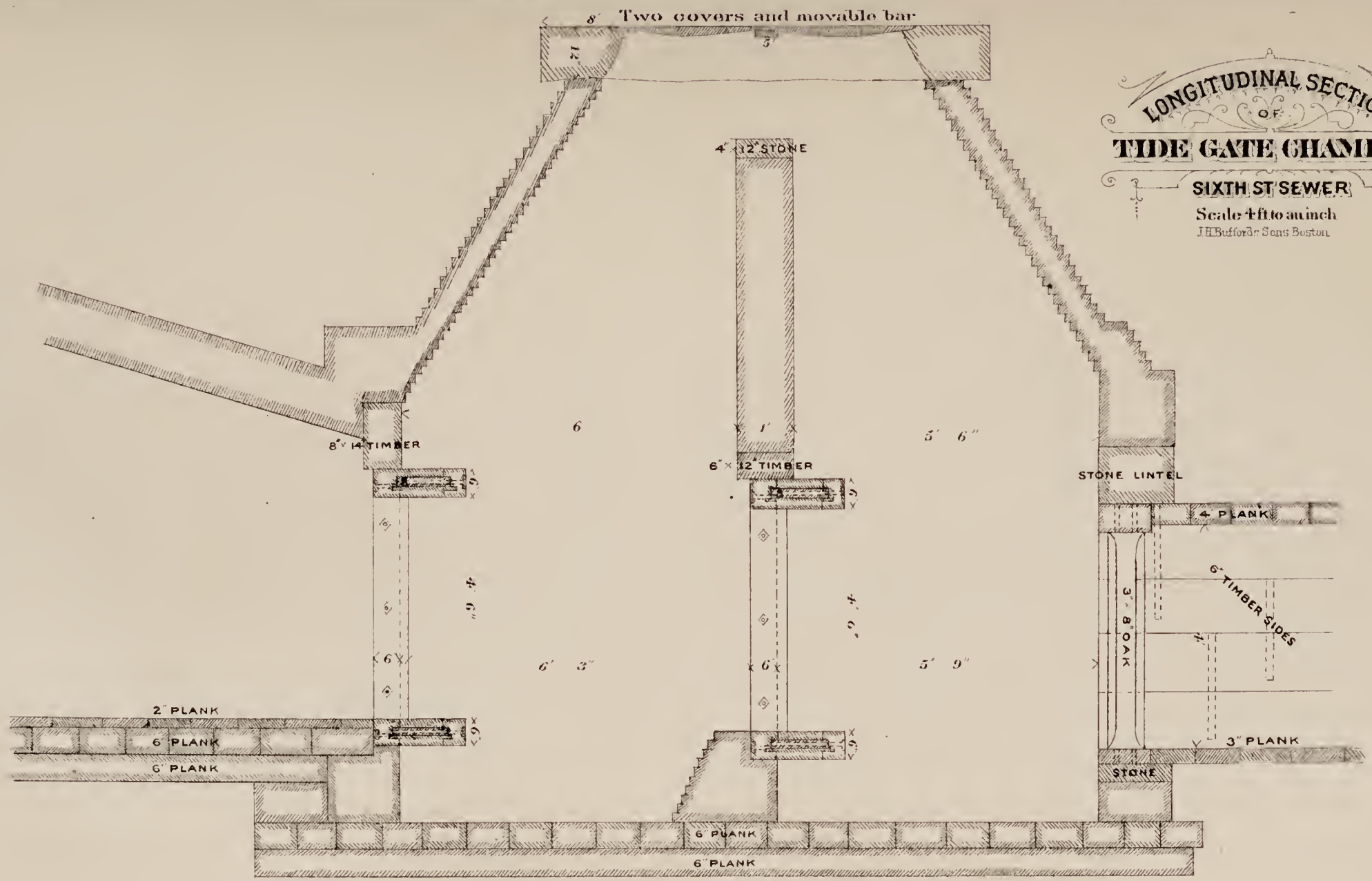
Scale 4 feet to an inch

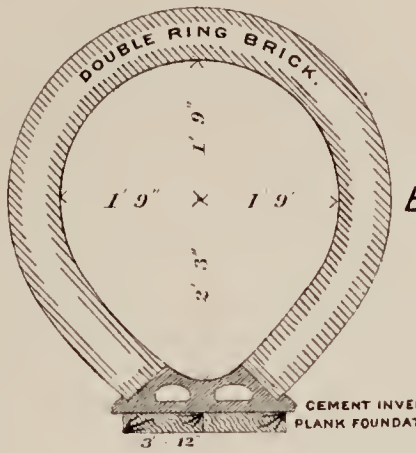
J.H.Buffords Sons Boston

LONGITUDINAL SECTION OF TIDE GATE CHAMBER SIXTH ST SEWER

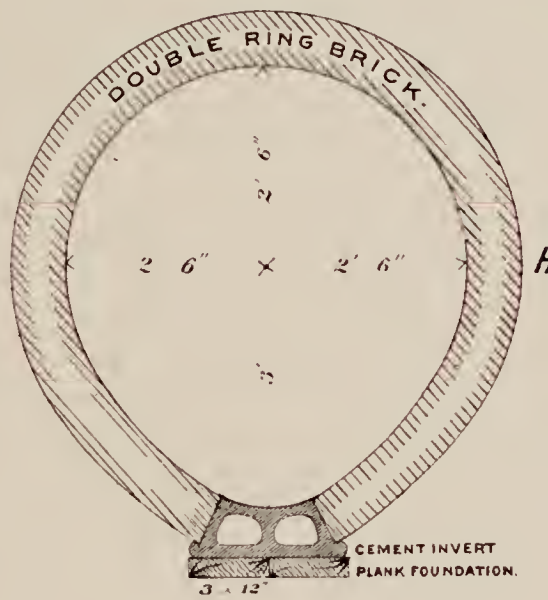
Scale 4 ft to an inch

J.H. Bufford's Sons Boston

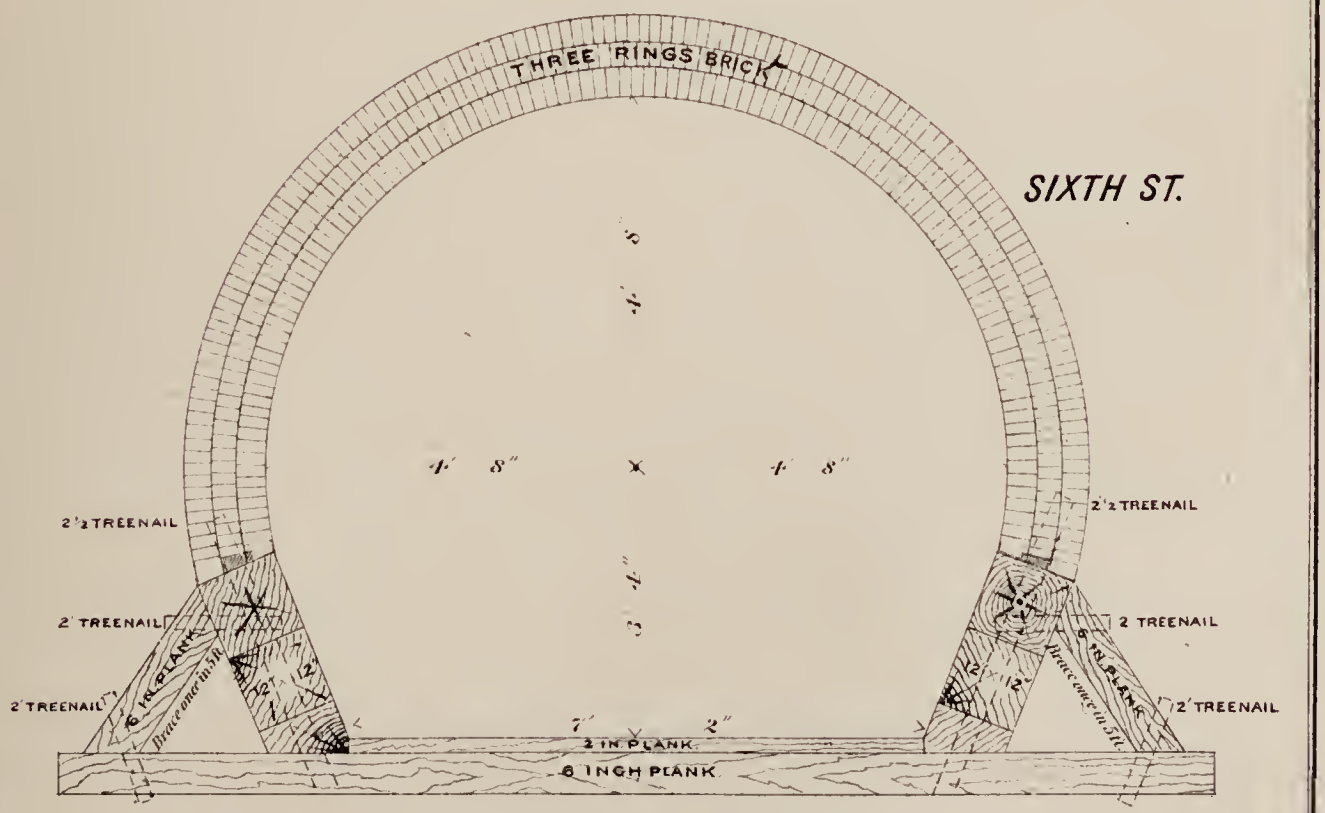




BREWERY ST.



HARVARD ST.



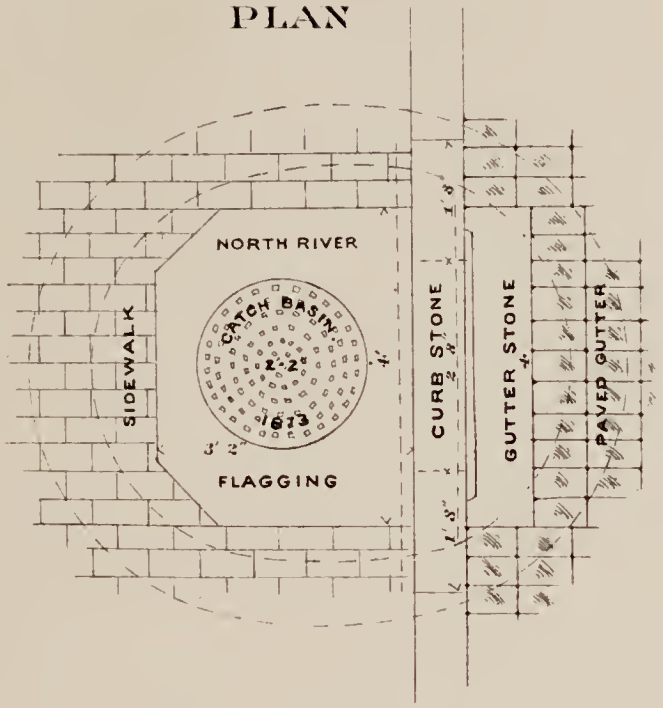
SIXTH ST.

CROSS SECTIONS.

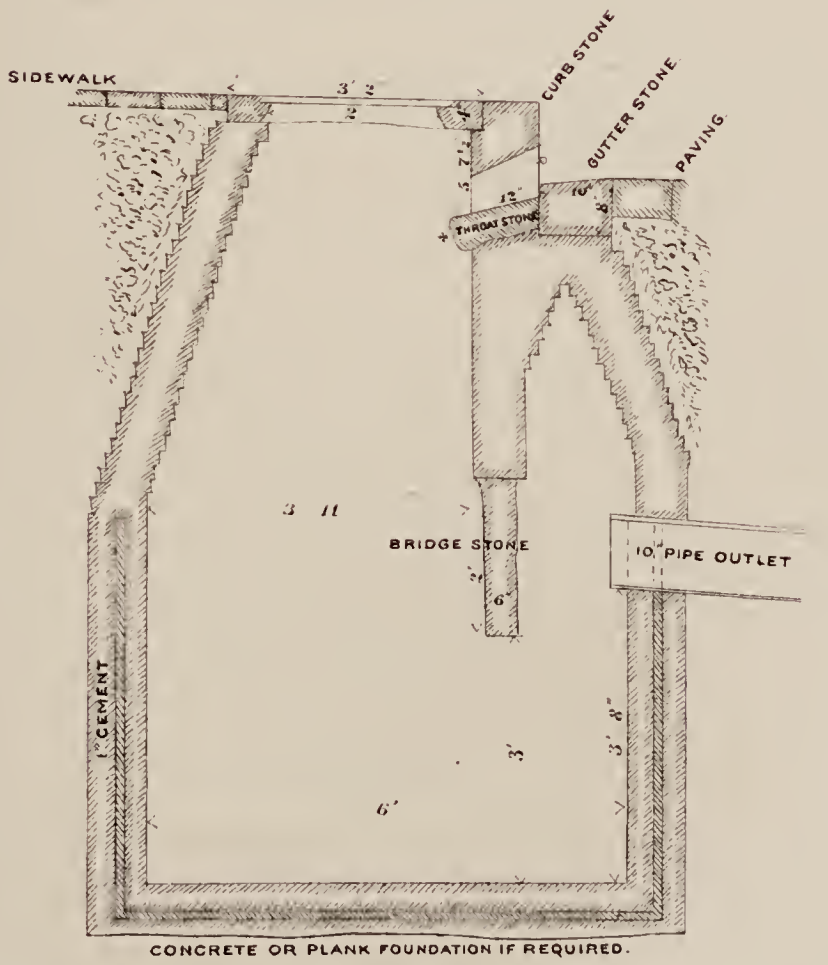
Scale 4 ft. to an inch

L.H. Buttrick & Sons Boston

PLAN



SECTION



CATCH BASIN.

Scale 1 ft. to an inch.

J.H.Buffords Sons Boston.

Permits have been granted during the year ending Nov. 30, 1873, to 403 persons, to enter private drains into the common sewers, as provided by ordinance relating thereto.

Seven hundred and seventy-nine catch-basins, exclusive of a large number of man-holes, have been cleaned out, and their contents removed during the year. Two thousand four hundred and seventy-three loads of material have been taken therefrom, at a cost of $1,553.85, an average for the cleansing of each catch-basin of $2.00, or $63\frac{1}{4}$ cents per load for material taken out and carted away.

One set of tide-gates and duplicates have been constructed in the Sixth Street sewer. During the year 44 man-holes and 163 catch-basins have been built.

Accompanying this Report will be found plates which I have prepared to give more definite and detailed information relating to the form and construction of sewers and tide-gates.

By recapitulation the above shows that sewers have been built, and are in process of construction, in 66 different streets, with a total length, built during the year ending November 30, of 36,890.34 feet, equal to $6\frac{987}{1000}$ miles, or 70 feet less than seven miles.

The appropriation for the year was $60,000.00. There have been paid for constructing sewers, for care and repairs, cleaning catch-basins, alterations required by street improvements, &c., as follows : —

From appropriation		for sewers and drains	$55,630.75
,,	,,	Washington Street District . .	40,369.90
,,	,,	Fresh Pond sewer	18,867.70
,,	,,	Spruce and Dublin Streets . .	23,894.24

Total sewerage expenditure by the City for the financial year ending Nov. 30, 1873, $138,762.59.

Bridges.

The City Engineer is required by ordinance to make annually "a careful examination of all the bridges within the city limits, and make such report respecting their condition as to safety, need of renewal or repairs, as the exigency of the case may require."

As in the preceding year, I have omitted the West Boston and Craigie's Bridges in my examinations, said bridges being under the care and management of a Joint Commission, as provided by special Act of Legislature. The condition of other bridges is reported as follows: —

Prison Point Bridge. — This drawbridge, reported defective in my two last annual Reports, continues with the same defects apparent, and requires rebuilding. The wheel-box stringers are in bad condition. The draw-arms, hanging stringers, and bulkhead timbers are rotten. As before stated, the alterations and improvements required on this drawbridge for *repairs* may be made without interruption to public travel. If rebuilt, as it should be to conform with statute requirements, travel over it must be suspended for the time. The roadway to the bridge is in good condition.

Third Street Bridge. — This drawbridge has been rebuilt the past season, and is now in safe condition for public travel.

North Avenue and Walden Street Bridges are in good repair as to safety for traffic over them.

Brookline Street Bridge and Draw are in good repair, and require no outlay except renewal of top planking.

River Street Bridge. — This bridge is in a very unsatisfactory condition. The lowest bulkhead timber is rotten. The bridge-stringers are somewhat decayed: they have too much load to carry, causing a strained and bent appearance. The fender pier should be rebuilt, and the bridge and draw widened, more fully to meet the demands of public travel. The draw itself is in very good condition.

Western Avenue Bridge. — A recent and more thorough examination of this bridge reveals the fact that it is an imperfect, weak structure. The piers contain but four piles each. The stringers are not satisfactory, yet for the present may not be considered dangerous for travel over them. The fender pier is nearly worthless in all its parts; the spruce piles have lost their strength; the planking-stringers and capping are all rotten, and require rebuilding. The draw itself is in good repair.

Brighton Street Bridge. — Both bridge and draw are in bad condition. The draw-arms and hanging-stringers are decayed

and decaying. The caps are not sound, but are in better condition than the draw-arms and stringers. The requirements here are a new draw and new top. The fender pier is sufficient.

Sixth Street Drawbridge. — A new drawbridge has been added to the City's care the past year. Sixth Street was laid out and accepted, from the north side of Broad Canal to Main Street, in 1872. That portion between Broadway and the north bank of Broad Canal was laid out Aug. 1, 1872. This action embraced the understanding that a drawbridge was to be built by the East Cambridge Land Company, acceptable to the City. Said drawbridge was built in accordance with the requirements of a Report of the Committee on Roads and Bridges, bearing date Nov. 27, 1872; was examined in all its parts, as to construction and working condition, by the Superintendent of Streets and City Engineer, on the first day of July last; and a certificate of same date was given by me, containing the conclusions agreed upon with regard to said structure. The same is now under the exclusive charge of the Superintendent of Streets.

Streets.

There have been laid out and accepted as public streets during the year those enumerated in the following table, adding to the care and cost of maintenance of streets an area of 1,050,133 square feet, or in length 4.77 miles.

During the year 54 stone bounds have been set to establish lines, and numerous applications have been answered for correct lines for building fences or houses.

STREETS LAID OUT FROM DEC. 1, 1872, TO DEC. 1, 1873.

Locality.			Description.				
Name of Street.	From	To	Width in feet.	Plan and Profile, by whom.	Date of Plan.	When laid out.	Length in feet.
Antrim	Broadway	Cambridge.	40	E. F. Bowker.	May 6, 1873.	July 24, 1873.	1,341.50
Charles	Third Street	Fifth.	50	J. G. Chase.	Nov. 16, 1871.	July 24, 1873.	722.00
Cogswell Avenue	North Avenue	Fitchburg R.R.	40	Barbour & Hodges.	April 19, 1873.	June 5, 1873.	943.25
Cottage	Magazine Street	Pearl St.	40	Barbour & Hodges.	May, 21, 1873.	July 24, 1873.	447.30
Dublin	Spruce Street	Fitchburg R.R.	40	City Engineer.	Dec. 3, 1872.	Dec. 13, 1872.	999.00
Elm	Harvard Street	Webster Ave.	40	J. G. Chase, / City Engineer.	August, 1870. / Dec. 3, 1873.	May 9, 1873.	2,708.30
Fifth	Gore Street	Winter St.	50	J. G. Chase.	Sept. 7, 1871.	July 24, 1873.	225.40
Fifth	Charles Street	Spring.	50	J. G. Chase.	Nov. 16, 1871.	July 24, 1873.	451.60
Franklin	Brookline Street	Sidney.	40	Barbour & Hodges.	July 25, 1873.	Oct. 30, 1873.	549.60
Green	Brookline Street	Pearl.	40	E. F. Bowker.	April 28, 1873.	Oct. 27, 1873.	391.00
Green	Pleasant Street	Bay.	40	E. F. Bowker.	June 27, 1873.	Nov. 4, 1873.	1,516.50
Hastings	Moore Street	Harvard.	30	City Engineer.	June, 1870.	July 9, 1873.	1,269.00
Harrison	Main Street	Washington.	30	City Engineer.	June, 1870.	May 9, 1873.	407.20
*Kent	Western Avenue	River.	50	Wheeler & Triscott.	July 10, 1872.	May 9, 1873.	750.00
Lincoln	Elm Street	Webster Ave.	40	E. F. Bowker.	May 8, 1873.	Sept. 19, 1873.	684.00
Mead	Cogswell Avenue	Walden St.	40	Barbour & Hodges.	April 19, 1873.	June 5, 1873.	341.00
Mellen	North Avenue	Oxford St.	50	Barbour & Hodges.	Sept. 19, 1872.	July 24, 1873.	850.00
Norfolk	Hampshire St.	Cambridge.	40	City Engineer.	May 2, 1873.	June 23, 1873.	778.50
Pleasant	River Street	Florence.	40	J. G. Chase.	June 30, 1870.	Oct. 22, 1873.	2,473.40
Portland	Hampshire St.	Cambridge.	50	City Engineer.	Nov. 22, 1872.	Dec. 7, 1872.	2,246.50
Sidney	Front Street	Auburn St. S. line	40	E. F. Bowker.	Aug. 28, 1872.	Oct. 1873.	679.00
Sparks	Mt. Auburn St.	Brattle.	40	J. G. Chase.	Nov. 29, 1869.	July 24, 1873.	1,084.70
Trowbridge	Main Street	Harvard.	40	Fuller & Whitney.	Nov. 25, 1872.	Dec. 20, 1872.	507.90
Walnut	River Street	Pleasant.	50	Wheeler & Triscott.	July 10, 1872.	April 5, 1873.	783.60
Wendell	North Avenue	Oxford St.	50	Barbour & Hodges.	Mar. 21, 1873.	June 2, 1873.	851.40
Upton	Magazine Street	Pleasant.	40	E. F. Bowker.	Aug. 6, 1873.	Oct. 1, 1873.	499.30
A new street	Lakeview Avenue	Lexington Ave.	40	Land given by Messrs. Davis, Taylor, & Demmon.		Total length.	25,162.25

* Now Putnam Avenue.

Street Widenings.

Austin Street. — Has been widened on the north side, between Main and School Streets, in accordance with a plan prepared by the City Engineer, dated Oct. 29, 1872. Date of widening, Jan. 3, 1873.

Austin Street, on the south side, near Main Street, has been widened by taking a strip of land according to a plan by the City Engineer, dated Oct. 29, 1872. Date of widening, Sept. 24, 1873.

Washington Street. — Has been widened on both sides, between Moore and Winsor Streets, making it 40 feet in width. Plan and profile from office of City Engineer, dated May 19, 1873. Date of widening, June 17, 1873.

Worcester Street. — Has been widened on the north side by taking two feet of land from Norfolk Street to Columbia Street. Plan by the City Engineer, dated Aug. 4, 1873. Date of widening, Sept. 19, 1873.

Prospect Street. — Has been widened by taking a strip of land on the west side, between Main and Austin Streets, making said street 50 feet wide, according to a plan by the City Engineer. Date of widening, Oct. 15, 1873.

Vassal Lané. — From Lakeview Avenue to Concord Avenue has been widened, land being given by the Tudor heirs.

Water Works.

Improvements referred to in my last report have progressed through the past year, and at this time are near completion. These include all foundations, pump and screen wells, new pumping house, boiler-house and coal-house, new pumping main from works to stand-pipe and reservoir, and new conduit extending from the screen room into the pond 630 feet in length, yet unfinished, all of which work will be presented in detail by the Water Board and Superintendent, which will render a more particular account of the several matters referred to unnecessary by me.

In connection, however, with the improvements in this section of the city, I will allude to the first efforts of preserving unpolluted

our source of water supply. The work ordered by the last City Government has been executed by the completion of the common sewer from the new pump-house, through Vassal Lane and Concord Avenue, to Alewife Brook. To protect said sewer from injury, the grade of Concord Avenue has been raised and the avenue widened. Vassal Lane has been widened, straightened, and improved to statute height, over land contributed by the Tudor heirs. A new street, for which land was given by Messrs. Davis, Taylor, and Demmon, has been graded to the required height; and the Water Works lot has been filled to a height for future requirements, and to conform to the erection of the new buildings, all being provided with sufficient and complete drainage, except needed improvement of Alewife Brook already mentioned.

Washington Street District.

An abstract of operations upon this territory previous to the present year may be obtained, if desirable, by reference to the last Annual Report of the City Engineer. Work has now been completed; new streets have been laid out and built; others have been raised and made passable, widened, and improved; sewerage system has been perfected and fully constructed; catch-basins have been built to ensure complete street surface drainage; and the entire district has been raised from its former uninviting, odious condition to the appearance it presents to public view to day.

I believe I am justified in saying that no work of this magnitude has been performed in the vicinity where so many interests were involved, and so many persons affected by the complicated operations, with less animosity of feeling expressed than has been made manifest upon this district. It must not be understood that the undertaking mentioned has been accomplished smoothly or without contention. In the nature of things, there always have been and always will be persons who by disposition are prone to complain of their own good fortune. The improvement here considered affords no exception to this proposition.

The filling and grading of the territory was commenced on the 2d of October, 1872, and completed Oct. 13, 1873, during which time there were deposited 163,041.1 cubic yards of material.

The total expenditures upon the district, exclusive of individual and direct charges, including filling and grading, sewers, catch-basins, and engineering services, have been $198,731.47.

The amount of sewer cost has been $48,401.45, leaving $150,330.02 as the amount charged directly to the cost of furnishing material, filling and grading, and incidental expenses.

Low Lands.

Franklin Street District. — On the sixth day of August last, under the direction of the Committee on Health, a contract was signed by Mr. Michael Egan, with sureties, for the filling and grading of this district. Work was commenced at once in accordance with his agreement. The material for filling this section comes from Brighton, two and one-fourth miles distant from the point of deposit, by teams which make four trips per day, and has not progressed in a manner entirely satisfactory up to the present time.

Payments made upon estimates rendered the first of each month, to and including November 1, amount to $9,000.00.

Cowperthwaite Street District. — A contract was signed, with sureties, by Mr. John C. Stiles, in accordance with his proposition for filling this district, on the sixth day of August last, as directed by the Committee on Health. The material is furnished by teams which make five trips per day from Camp Cameron grounds, the distance being two miles, and from the vicinity of Mount Auburn Cemetery (McDonald's gravel bank), the latter haul being one and a half miles, and the teams making six trips per day. The work thus far is conducted in a systematic and satisfactory manner.

Payments are made on the first of each month upon estimates for amounts furnished the preceding month, and on the first of November amounted to $14,096.25.

Cambridge Street District. — The Committee on Health awarded the contract for filling this district to William H. Ward of Connecticut, who subsequently declined to comply with the conditions of his propositions for doing the same; and upon other

invitations for said work it was assigned to Mr. Thomas McSorley, who executed a contract on his part with sureties, on the twenty-fifth day of August last. The material for filling in this section is furnished from Belmont by the Fitchburg Railroad, and is of superior quality for the purpose. Teams are required to distribute it over the territory after being delivered from the cars, and commendable progress has been made in the work.

Estimates are made monthly for amounts of material furnished the preceding month, and payments have been made, to and including November 1, to the amount of $14,445.69.

Miller's River Lower Basin. — On the twenty-eighth day of November last, a contract was fully executed with Mr. John P. Squire and sureties for the filling of this section as referred to in an order passed in Board of Aldermen October 22, the extent of which by estimation is 100,000 cubic yards.

Work was immediately commenced, and arrangements are now being made by the contractor which will in a great measure facilitate the execution of the work. No estimate or payment has yet been made upon this last-named contract.

The total amount paid from the appropriation for filling low lands has been forty-four thousand five hundred and seven and $\frac{26}{100}$ dollars ($44,507.26), of which amount the sum of $1,469.30 was paid for construction of sewers.

The work required from this office in addition to the regular requirements thereof, arising from the nature of these several contracts, has been difficult and constant.

Previous to determination by the City to proceed with the orders previously passed, no extended actual surveys of the numerous estates covering the several districts for areas or quantities had been made, except that required, by giving grades for the action of individual ownership, and which stimulated no effort whatever. Upon the commencement of operations by contractors, immediate surveys and levels were required and at once commenced upon each section of the city here designated. They have constantly and with care progressed since then, but yet remain in a crude and unfinished condition. Constant efforts through months must elapse, before the plans representing each of the several districts

can be presented in the condition their importance demands. All the time possible is devoted to this service, and the favorable season enables satisfactory advance to be made in each case.

Cemetery.

No diminution in requirements for work, laying out lots, and readjusting the grounds here, has occurred during the past year. A new location and enlarged area has been assigned the Soldiers' Lot, which is laid out and graded. The public lot having been filled, the Commissioners deemed it advisable further to extend it by appropriating a portion of the original lotting-up lying immediately west of the Soldiers' Lot upon the northerly border of the Cemetery grounds. This land has been relotted to meet requirements, graded, and, as staked out, is now being used. The time cannot be far prolonged without action upon some matters of importance in this connection presented in my last Annual Report.

Horse Railroad Tracks.

The measure originating in the last City Government, respecting the laying of a track in Prospect Street, from Main Street to Cambridge Street, received favorable action from the present City Council. The track has been laid, and has been in successful operation since early in the summer, establishing its prosperity as a public convenience far beyond the most sanguine predictions. Location plans have been filed in this office.

New City Map.

The map mentioned in my last Annual Report was placed in the hands of Fred. Mayer & Sons, lithographers, New York, on the eleventh day of March last, with an agreement that the work was to be furnished complete within three months. The execution of the map has been delayed by them, principally on account of the unworkmanlike condition of the proof-sheets forwarded for correction. The accepted sheets were transmitted about four weeks since, and the receipt of copies ordered is daily expected.

Office.

There have been employed in this office, permanently and transiently during the past year, ten persons. An appropriation of seven thousand dollars was made early in the season for City Engineering. The expenditures for the year, including the salary of the City Engineer, have amounted to six thousand two hundred ninety-seven and $\frac{35}{100}$ dollars ($6,297.35).

Board of Public Works.

The eighth section of the ordinance relating to Engineering which provides that the City Engineer shall annually, in the month of December, present a report in relation to his department, also gives liberty for the expression of views which he may deem it expedient to offer for general information. Upon this ground, the suggestion here advanced takes a broader view than if confined to the consideration of this department of the city exclusively, and perhaps may be considered as stepping aside from legitimate duties. Only a suggestion, however, will be made with a few reasons therefor.

Would it not be advisable to consider the expediency of asking legislation, which will empower the City Council to appoint commissioners who shall have general charge and supervision of all the departments of the city consolidated? The opinion that such a course would secure a vast improvement on present methods has developed in my mind from year to year, as I have seen the want of concerted action in conducting different branches of the City's business and the unnecessary expenditure consequent thereupon; and I believe deliberations on the subject will ultimately lead to the adoption of some plan which shall place the general supervision and control of the several departments under the directing care of a Board of Public Works. We require now ordinance regulations in regard to our common sewers, which shall prescribe the mode of entrance thereto, and govern the construction of cesspools or stench traps in connection with the same. We need harmony of action in all expenditures of money, whether upon our public streets in grading, rebuilding, macadamizing, paving, laying curb-stones,

flagging, or sidewalks, the construction of common sewers and considerations connected with the same, the laying of all water and gas pipes (both main and service), the care and expenditures upon all our bridges, public buildings, school-houses, &c., the levying and collecting assessments upon sewers or other legalized betterment, the removal of encroachments and encumbrances upon streets and sidewalks, &c., which harmony can only be attained by consolidation with unity of system under competent supervision. The advantages of such arrangement would be combined and assisting action of all departments in place of independent and frequently neutralizing efforts.

All which is respectfully submitted.

J. G. CHASE,

City Engineer.

REPORT

OF THE

COMMISSIONER ON BRIDGES.

To the Honorable the City Council of Cambridge:—

THE Commissioners on West Boston and Canal or Craigie's Bridges submit their Third Annual Report of matters relating to the care and management of said bridges.

West Boston Bridge.

The draw of this bridge was thoroughly repaired early in the spring; and, in addition to the improvements made in its construction, steam-power was applied for moving it, and aiding vessels in their passage through the draw-ways. The machinery used for these purposes consists of an eight-horse power engine, with double cylinders; a line of horizontal shafting, geared to and extending from the engine to a vertical shaft, to which it is also geared; a toothed wheel, which is on the upper end of this vertical shaft, and is partially encircled by a chain, the ends of which are connected with the upper track frame of the draw; and a line of shafting extending to the edges of the draw-pier, at right angles to the shafting running the draw, the ends of this shaft being provided with winch-heads, which are used in pulling vessels.

The engine-house is a plain but substantial wooden structure, and contains two rooms, one for the engine and its appurtenances, and the other for the use of the engineer; a shed attached to it contains the coal-bin and water-tank.

The operation of the machinery has proved perfectly satisfactory to your Commissioners, and prevents much of the delay formerly

so annoying to the travel upon this bridge. The time occupied in opening and closing the draw was, before the application of the machinery, about seven minutes: it now seldom exceeds one minute. Vessels were frequently from fifteen to twenty-five minutes in passing through: they can now be taken through in from five to seven minutes.

The bridge is in good order, and will require but a small outlay for repairs during the ensuing year. The expense of maintenance has been increased, to some extent, by the application of steam-power, and the substitution of gas for oil in lighting the bridge; but your Commissioners are confident that the benefits derived therefrom amply compensate for the additional cost.

Canal or Craigie's Bridge.

The plans for the reconstruction of this bridge, which were fully described in our last Annual Report, were presented to the Harbor Commissioners for their approval in February. At an informal hearing given by the Commission it was ascertained that a special Act of the Legislature would be required to enable your Commissioners to proceed with the rebuilding as proposed. Application for an Act was immediately made to the Legislature, but its passage was not secured until the 15th of April. The Act is as follows (see chap. 199, Acts of 1873): —

"SECTION 1. The Commissioners on the West Boston and Craigie's or Canal Bridges may build a new bridge in place of, or repair, reconstruct, and widen, to a width not exceeding 64 feet, the present Craigie or Canal Bridge; and may construct fender-guards, make changes in the draw and draw-piers, and do such other acts as they may deem necessary, expedient, or convenient in the premises, to secure a bridge and draw which shall safely and conveniently accommodate public travel and navigation, subject, however, to the provisions of chapter four hundred and thirty-two of the Acts of the year eighteen hundred and sixty-nine."

"SECTION 2. To secure and accomplish the object and purposes of the preceding section, said Commissioners may take such lands, buildings, wharves, and structures as they may deem necessary; and all damages to private property, or for land taken under this Act, shall be ascertained as provided in chapter forty-three of

the General Statutes, and, together with all other expenses incurred hereunder, shall be paid equally by the Cities of Boston and Cambridge."

After the passage of this Act, the plans were again submitted to the Harbor Commission for their approval, which they failed to receive.

The objections made by the Harbor Commission to the plans as proposed were the driving of intermediate piers in the portion of the bridge between the new draw-way and the Cambridge end, and the driving of intermediate piles in the piers between the new draw-way and the Boston end. The present piers not being in the line of the current are, in the opinion of the Commission, a serious obstruction to the water-way, any increase of which, by driving more piles, would be attended with injurious results to the harbor.

The modification of the plans, to render them acceptable to the Harbor Commission, required considerable time; and as it was too late in the season for the work of rebuilding to be commenced with any prospect of its being completed before cold weather, it was deemed advisable to postpone any further action until the coming year. Alterations which have been made in the plans will involve an increased expenditure of $22,000 in rebuilding the bridge; and as the machinery for moving the draw on West Boston Bridge has proved so satisfactory, we propose to duplicate it on Craigie's at an expense for machinery, water-pipe, tank, engine-house, &c., of $5,000, making the total estimated cost of rebuilding the bridge $187,000.

In this connection your Commissioners feel called upon to say that they would be glad to recommend to the two cities which they jointly represent the removal of the present bridge structure, and the building of a bridge with stone or iron piers, and an iron superstructure.

The pile bridges which are so common in this vicinity are a frequent source of expense from the decay of the wooden superstructure, the repairing and rebuilding of which causes interruption to the travel, involving a loss of time and money which it is impossible to estimate, but which must in the aggregate amount to a large sum. This loss must increase in the same ratio as the

travel, and can be remedied only by building permanent iron or stone structures, or by an increased number of bridges.

The bridges connecting Cambridge and Boston cross the channel which connects the Charles River basin with the harbor; and any increase in their number obstructs the flow in the channel, and diminishes the value of the tidal basin. The eminent engineers who, in connection with the Harbor Commission, have given this subject so much study, looking to the future interests of the cities on opposite sides of the river, are opposed to any increase of the number or extent of the obstructions; and the Commission will not probably consent to the building of any more bridges upon the plan of the present ones, especially as the annoyance and expense attendant upon their frequently recurring repair and reconstruction could be obviated by replacing them with practically indestructible structures.

The principal and we may say the only reason why we do not recommend the replacing of Craigie's Bridge by an iron or similar permanent structure is the great cost, which, in the present financial condition of Boston and Cambridge, we do not feel would be warranted.

A bridge of the character we mention would cost at least $500,000, whereas the estimated expense of rebuilding the bridge in accordance with our present plans is less than one-half of this sum; the interest on the difference of cost for a period of eight or ten years would rebuild the entire bridge.

The sub-structure of an oak-pile bridge will last an indefinite time in a situation where it is not subjected to the ravages of worms. Many of the piles in Craigie's Bridge have been there for seventy years, and are still in a fair state of preservation. The superstructure, or such portion of it as may be unprotected from the weather, will require renewal in twelve or fifteen years, and even in less time if the timber used is not of good quality. The expense of removing the portions of the superstructure most liable to decay is small in comparison with the total cost of the bridge; and in the case of the bridge under consideration the interest on the difference in cost of the two plans would amount in three years to a sum large enough to do all that would be required to make the bridge at the end of twelve or fifteen years good for an additional term of the same length.

While, therefore, we acknowledge it would be desirable to build a permanent structure, we think the reasons for not recommending it, which we have fully explained, will justify us in the conclusion that it cannot at present be shown to be the most economical, although it may not be many years before the price of timber will be so enhanced, by the reckless destruction of the forests, as to make the cost of a pile bridge closely approximate to that of one of iron or stone.

It is our intention to advertise for proposals for rebuilding this bridge as soon as the revised plans have received the approval of the Harbor Commission; and the work will be put under contract in January, to allow ample time for the contractor to obtain the piles and timber before commencing work in the spring.

The unstable condition of the present bridge has been a source of anxiety during the past year; and it has only been by constant watchfulness and immediate repair of the weak places as soon as observed that accident to or stoppage of the travel has been prevented.

Appended to this Report is a statement of the payments made by the City of Cambridge on account of the bridges from Dec. 1, 1872, to Dec. 1, 1873, together with a statement from the draw-tenders of the number of times the draws were opened during the same term.

Respectfully submitted.

EZRA PARMENTER,

Commissioner for Cambridge.

Number of times the draw on West Boston Bridge has been opened during the following months: —

December, 1872	78
January, 1873	2
February	6
March	50
April	147
May	188
June	193
July	207
August	154
September	139
October	132
November	183
	1,479

Number of times the draw on Craigie's Bridge has been opened during the following months : —

December, 1872	210
January, 1873	24
February	21
March	115
April	408
May	646
June	689
July	596
August	493
September	398
October	445
November	387
	4,432

The amount expended by City of Cambridge for care and maintenance of West Boston and Craigie's Bridges is as follows : —

From Dec. 1, 1872, to Dec. 1, 1873, —

Commissioner's salary	$500.00
Repairs and materials	2,468.53
Gas, gas-pipe, and fixtures	577.84
Paving	426.00
Steam-engine for draw	1,267.77
Labor	2,031.15
Other expenses	877.13
Amount of expenses	$8,148.42

REPORT

OF THE

TRUSTEES OF THE DANA LIBRARY.

The Trustees of the Dana Library herewith present to the City Council their Sixteenth Annual Report.

The operations of the Library for the year just ended do not differ very materially from those of the years immediately preceding. As an auxiliary to our system of public education, and as a means for the diffusion of general information, literary entertainment, and various kinds of useful knowledge among the people, it is doing its work silently, but we have no doubt effectually. We are glad to be able to state that there has been during the past year a decided increase in the demand for works of the more solid and useful character. Books that treat of practical mechanics, general science, philosophy, engineering, history, travels, &c., have been called for in greater numbers than in any previous year; while the demand for what is generally known as light literature has sensibly diminished.

The number of readers is about the same as in 1872, subscribers being six only in excess of that year; while the number of volumes taken out is nearly one thousand less. Many works of a high character have been added, which are retained by the subscribers longer than those of the lighter sort. This fact indicates, we think, more thorough and systematic reading and study, and an increased appreciation of the institution.

The statistics for the year, as gathered from the Report of the Librarian to the Trustees, are here embodied.

The number of books added was 748. Of these, thirty-seven were given by Captain William A. Parker, U. S. N.; one by John N. Genin, Esq., of New York; two by the United States Bureau of Education; one by the Board of Railroad Commissioners; four by Mr. J. S. Orne; fifteen by Mr. W. K. Mehaffey; one by Harriet A. Tenney, of Michigan; one by Mr. J. A. Jacobs; nine by Mr. George F. Piper; two by Mr. P. H. Raymond; three by the Smithsonian Institution; and five by Maria L. Huntley, — making a total of eighty-one by donation. The remainder, 677, were purchased out of the City's appropriation. The whole number belonging to the Library is 6,672. At the yearly examination four volumes were missing, and have not yet been accounted for.

Number of books given out during the year	12,566
Weekly average	257
Largest number in any week	349
,, ,, ,, ,, day	165

More were taken in March, April, and May than in any other quarter of the year.

The subscriptions for the year amount to	$310.00
Received from fines	24.51
,, ,, sale of catalogues	15.70
Total receipts	$350.21

Which has been paid to the City Treasurer, and the vouchers placed on file.

Amount of the City's Appropriation		$4,000.00
Expended for salaries of the Librarian and Assistant and Superintendent of the new Reading Room	$763.33	
Rent and care of rooms	938.53	
Fitting new Reading Room, lighting, and incidentals	704.61	
Books and stationery	1,538.22	
		3,944.69
Balance not used		$55.31

Two years since the Trustees fitted up a room contiguous to the Library, and connected by a door, for the use of such subscribers as desired to consult books of reference which were too bulky or too costly to admit of general circulation. A great many young persons resort to this room to obtain the advantage of the class of books just mentioned, and for the quiet enjoyment of others that they do not wish to take away. Of the advantage of this room for reading and consultation there can be no doubt. One instance — and there are probably many — has come to our knowledge. A young man recently stated to the Librarian that he was an engine builder by trade, and that during the past year he had superintended the building of eight engines, every one of which was an entire success; and that he attributed the success in a great measure to information that he had obtained from books in this Library.

The number of visitors to the room during the year was 1,792; an average of about twelve for each library day. The tables have been supplied with the more prominent magazines and reviews of our own country and of Great Britain, but not with the newspapers of the time. A few of the most useful weekly publications have been furnished, but what are known strictly as *newspapers* have not been provided.

The Trustees of 1872 voted to "keep the Reading Room open each week-day evening from six to ten o'clock, and furnish it with the leading newspapers in addition to the publications already provided." This resolve was carried into effect, but not in the manner precisely as indicated by the vote. A new room was obtained in another building, entirely disconnected from that in which the Library was kept. This room was fitted for its purpose, a superintendent appointed, and the public informed by advertisement that it was established for the free use of all who chose to resort to it. It was called the Dana Library Reading Room. During the *ten* months that it has been open to the public, the average daily attendance has been twenty-six. The annual expense of maintaining this room will not come far short of nine hundred dollars, a cost to the city of nearly thirty-five dollars to each visitor. The largest average attendance was during the first two months; the smallest in the months of May, June, and July,

when it fell to nineteen and a fraction. In August and September the average rose to twenty-two, and in October and November to twenty-five. The experiment has been on trial for ten months, a sufficient time to determine its practicability, with a result by no means flattering. Under the circumstances it will be incumbent upon the future Board to consider and determine upon the propriety of continuing the arrangement as it now exists. By transferring the newspaper files and periodicals to the small room contiguous to the Library, it is believed the public can be as well served as at present, and a saving of rent, and care, and incidentals effected, to an amount not less than five hundred dollars a year, which sum, if expended in books, would, no doubt, add very much to the usefulness of the Library, and extend its benefits very considerably among the people. We commend the subject to the careful consideration of our successors.

The by-laws permit all to use the books upon payment of one dollar a year. The amount received from subscribers is placed in the City Treasury. It does not inure directly to the benefit of the Library, but passes into the treasury as ordinary revenue, and, being quite small, is never, we believe, considered an element in determining the amount of the annual appropriation for its support. We suggest to those who may have the Library in charge the coming year, to inquire and decide if its utility will not be enhanced, if its benefits will not be better appreciated, if it will not reach more nearly the object for which it was established, should this yearly charge upon subscribers be dispensed with, and the institution be made in the fullest sense a *Free Public Library*. It may or it may not be the fact that any decline the use of the books from inability or indisposition to pay the sum demanded by the by-laws. We cannot ascertain if there are any such; and, if we could, the result would not be material. The institution is supported wholly by the City. The funds for its maintenance are drawn from precisely the same source as are the funds for the support of the public schools. Why, then, should it not be as accessible to all as the public schools? It forms a part of the City's educational system: why should it not be as available as any other part of that system? The police and fire departments, and many other

branches of the public service, indeed almost all, are maintained by a direct charge upon the people; but no one is required to pay a special tax when those departments are interposed for his protection. Why should not the citizen have as unrestricted use of the Library as of any other portion of the public administration? The amount charged is small; but is *any* tax upon knowledge advisable?

Respectfully submitted.

ISAAC BRADFORD,
H. R. HARDING,
GEORGE F. PIPER,
JOHN S. MARCH,
} *Trustees of the Dana Library.*

REPORT

OF THE

TRUSTEES OF THE DOWSE INSTITUTE.

To the Honorable City Council of Cambridge: —

THE Board of Trustees of the Dowse Institute respectfully report: —

The course before the Institute last season was given in Union Hall, Cambridgeport, and consisted of Lectures by James T. Fields, Edmund Yates, General Kilpatrick, Robert Collyer, James Parton, George W. Curtis, W. H. H. Murray, and George Vandenhoff; of Readings by J. W. Churchill; and of a Concert by the Mendelssohn Quintette Club.

A copy of the Annual Report of the Treasurer accompanies this Report, and contains an exact account of receipts and expenditures.

During the month of November, the Board received with deep regret the resignation of Mr. Charles Deane, one of its original members, and for many years its President and Treasurer. The vacancy thus created was filled by the election of Mr. Willard A. Bullard. Subsequently, John C. Dodge, Esq., was chosen President, and Mr. W. A. Bullard Treasurer.

The Trustees would thankfully acknowledge the generous gift, through Mr. Deane, of ten shares of stock in the Union Hall Corporation.

In conclusion, the Trustees would congratulate their fellow-citizens upon the erection by the Union Hall Corporation of a beautiful hall, complete in its appointments, and large enough, among other things, to accommodate all who wish to attend the lectures and other exercises of the Institute.

Respectfully submitted.

JOHN C. DODGE,
ISAAC BRADFORD,
W. W. WELLINGTON,
F. H. WHITMAN,
W. A. BULLARD,
} *Board of Trustees.*

December, 1873.

Dr. DOWSE INSTITUTE IN ACCOUNT WITH CHARLES DEANE, TREASURER. **Cr.**

1872.		
April 10	To paid R. Litchfield, old bill	$7.00
Oct. 29	„ Mendelssohn Quintette Club	134.00
„ 29	„ J. T. Fields, Lecture	100.00
Nov. 5	„ E. Yates, Lecture	100.00
„ 12	„ J. W. Churchill	100.00
„ 19	„ Gen. Kilpatrick	110.00
„ 26	„ Robert Collyer	125.00
Dec. 3	„ J. Parton	100.00
„ 10	„ . W. Curtis	100.00
„ 17	„ W. H. H. Murray	100.00
„ 24	„ George Vandenhoff	125.00
Jan., 1873	„ John Ford	19.50
	„ J. Cox	26.50
	„ G. F. Brooks	3.00
	„ S. F. Hunt	22.00
	„ C. L. Russell	24.00
	„ Boston Journal	4.88
	„ „ Transcript	4.00
	„ Cambridge Chronicle	29.50
	„ Geo. Fisher	6.00
	„ G. M. Taylor	9.00
	„ S. B. Whitney	9.00
	„ A. Bigelow, Jr.	6.00
	„ J. H. Crocker	5.00
	„ J. Pike	3.00
	„ W. A. Bullard	10.00
	„ W. W. Wellington	5.00
	„ Janitor, extra	10.00
	„ Union Hall	550.00
		$1,847.38
	New account	64.01
		$1,911.39

1872.		
March.	By balance from account	$81.89
October.	„ sale tickets	1,229.50
December.	„ City of Cambridge	600.00
		$1,911.39

REPORT

OF THE

TRUSTEES OF THE SANDERS TEMPERANCE FUND.

To the City Council:—

THE Trustees of the Sanders Temperance Fund respectfully submit herewith their Ninth Annual Report for year ending Nov. 30, 1873.

The Fund ($10,000) left as a legacy to the City by will of Charles Sanders, remains invested, as heretofore, in notes of the City, bearing interest at six per cent., and producing an income thereby of six hundred dollars, which has all been paid to the Missionary as salary.

In accordance with the requirements of the ordinance relating thereto, Samuel C. Knights was appointed as Missionary in April last, having previously held the position in 1870 and 1871. His Report, accompanying this, gives a statement of the details of his observations and work during the year.

ISAAC BRADFORD,
F. H. WHITMAN,
A. P. CLARKE,
THOMAS GRIEVES,
Trustees of the Sanders Temperance Fund.

CAMBRIDGE, *Dec.* 24, 1873.

REPORT

OF

SANDERS TEMPERANCE FUND MISSIONARY.

To the Trustees of the Sanders Temperance Fund: —

GENTLEMEN, — Since my appointment as your Missionary, I have aided and advised a large number of unfortunate persons. Have found employment for some, and others, through my efforts, have reformed, and are now members in good standing of our temperance societies.

I have attended the Police Court regularly, but, feeling that my labors should not be confined exclusively to that place, have also visited many families where rum was working ruin. In most instances I am happy to say that my labors have been successful.

I have held public meetings every Sunday evening at the corner of Norfolk and Main Streets, with unusually good results, as a very large number have signed the pledge. For the purpose of making these meetings more interesting, I have procured speakers from out of town. This has been attended with some expense.

My thanks are due to Judge Ladd, of the Police Court, and also to Mr. McIntire, the clerk, for their uniform aid and kindness to me in my labors.

The Chief of Police, Mr. Copeland, with the efficient force under him, have also rendered me valuable assistance in my labors in behalf of the drunkard.

On looking over the field of my labors for the past year, I cannot help but feel gratified and encouraged at the results.

Respectfully submitted.

SAMUEL C. KNIGHTS,

Missionary.

CAMBRIDGE, *Dec.* 23 1873

REPORT

OF

MILK INSPECTOR.

To His Honor the Mayor and City Council of the City of Cambridge:—

THE undersigned would most respectfully submit his First Annual Report for the year ending Dec. 1, 1873:—

Three classes are engaged in the sale of milk in this city: 1st. Wholesale dealers, selling from their wagons. 2d. Retail dealers, selling from stores and shops. 3d. Parties keeping cows, and selling to private families in their immediate neighborhood.

Number of wholesale dealers registered	51
Number of wholesale dealers now in business	51
Whole number of retail dealers registered	238
Number of retail dealers now in business	238
Number of persons keeping cows registered	66
Number of cows kept by those registered	108
Number of cases of milk analyzed by chemist	1
Number of samples of milk inspected by Inspector	318
Largest amount of added water	25 per cent.
Number of complaints in Police Court	1
Number of convictions in Police Court	1
Number having appealed to Superior Court	1
Number of convictions in Superior Court	1

Amount of fine paid by Charles E. Ellis, of East Cambridge, the party convicted as above reported, $100, together with the costs of prosecution and defending suit in the Superior Court

at Lowell, in all over $200, making the above case of adulteration rather expensive for the defendant.

I have visited all places where milk is publicly sold in the city, and inspected one or more samples in each and every place. I have also inspected a large number of samples at the office, and at private residences when reasonable cause was presented that the milk left was impure; and I am pleased to state that in almost every case the lactometer indicated pure milk.

The principal substances employed in the adulteration of milk are the following: —

Water.
Chalk or whiting.
Turmeric or annatto.
Sugar.
Salt.

Water. — The effect of the admixture of water upon milk is to lessen the specific gravity of the milk; so that an approximate idea may be obtained of the amount of water in any given sample, by measuring the density of either the milk, the skimmed milk, or the serum. Thus, if one-fourth of a specimen is made up of added water, the hydrometer would then indicate a proportionately lower density; *e.g.*, if the sample originally possessed a specific gravity of 1.031, it would now measure but 1.021. A better basis of measurement, however, is afforded by the skimmed milk, or by the serum. The variation in the density of different samples of pure milk is influenced chiefly by the amount of fatty matter and caseine present. Now, if a few drops of acetic acid are added to the milk, these two constituents may be coagulated and removed, and in the serum which remains behind we have a factor which in different specimens of pure milk admits of but little variation, and furnishes therefore a means of tolerably accurate measurement.

The effect upon the serum of the addition of various portions of water, according to Hassall, is shown by the following table: —

SERUM CONTAINING PERCENTAGES OF WATER.

	Specific gravity.
Pure serum	1.029
Water 10 per cent.	1.025
,, 20 ,,	1.022
,, 30 ,,	1.020
,, 40 ,,	1.017
,, 50 ,,	1.014

A standard of comparison is obtained from the examination of a large number of samples of known purity, by which the range of variation is ascertained.

Having learned the specific gravity of the serum, and the quantity of cream present, we can form a tolerably accurate estimate of the richness of any given specimen.

One source of error must, however, be guarded against, which arises from the fact that if sugar or salt has been added to the milk, the specific gravity may be thereby increased several degrees.

The quantity of water added to a specimen may be also estimated, indirectly, by determining quantitatively the amount of the solid constituents, or of the milk sugar present.

Chalk or Whiting. — It is not uncommonly asserted and believed that this substance is sometimes added to soured milk to neutralize its acidity.

That any such crude adulteration is ever resorted to in this vicinity is improbable; for chalk, being insoluble in milk, would form a sediment, and thus lead to inevitable exposure.

The addition of a drop of acid to such sediment would cause effervescence.

Turmeric or Annatto. — These substances are said to be used for the purpose of restoring the rich cream color to deteriorated milk. Their presence is determined by evaporating a portion of the suspected sample to about one-eighth of its original bulk, and then adding a small quantity of caustic potash, when the yellow color becomes brownish, if turmeric has been added, or a bright red in the case of annatto.

Sugar. — This is known to be extensively employed in the

form of caramel or burnt sugar, to add to the color and develop the flavor of impoverished milk.

For this purpose a very small amount is all that is required, so that it cannot have any great effect upon the density of a sample. Its presence is ascertained by mixing a little yeast with the serum of the sample, and exposing the mixture to a temperature of between 70° and 80° Fahrenheit. An abundant and rapid disengagement of gas will take place in the course of two or three hours, which is a sure sign of the presence of sugar; for pure milk cannot ferment within so short a time, nor is the fermentation ever brisk or tumultuous.

Salt. — This substance is understood to be used pretty extensively, with the object of increasing the density of impoverished milk, and at the same time developing its flavor.

Its presence is not to be detected by the ordinary observer, but is made manifest to the chemist by the weight and taste of the ash.

The following extracts from the law may be of interest: —

By the law of 1859 it was enacted that "No person shall offer for sale in this Commonwealth milk produced from cows fed upon the refuse of breweries and distilleries, or any other substance which may be deleterious to the quality of the milk, under a penalty of ten dollars for each offence."

The law of 1872 is as follows: —

An Act to prevent the Sale or Exchange of Adulterated Milk.

Be it enacted, &c., as follows: —

Section 1. Whoever sells or exchanges, or has in his possession with intent to sell or exchange, or offers for sale or exchange, adulterated milk, or milk to which water or any foreign substance has been added, shall for the first offence be punished by a fine of not less than twenty nor more than one hundred dollars, and for any subsequent offence by a fine not less than fifty nor more than three hundred dollars.

Section 2. Whoever sells or exchanges, or has in his possession with intent to sell or exchange, or offers for sale or exchange as pure milk, any milk from which the cream or any part thereof has been removed, shall be liable to the penalties provided in the preceding section.

SECTION 3. Whoever knowingly sells or exchanges, or has in his possession with intent to sell or exchange, or offers for sale or exchange, adulterated milk, or milk to which water or any foreign substance has been added, shall for the first offence be punished by a fine of not less than fifty nor more than three hundred dollars, and for any subsequent offence by a fine not less than one hundred dollars, and imprisonment in the house of correction not less than thirty nor more than ninety days.

SECTION 6. This Act shall take effect upon its passage.

Approved May 4, 1872.

All persons are most respectfully requested to send to my office at once samples of milk purchased by them, of the purity of which there is any doubt, and are also requested to report to me any violation of any of the provisions of the above law.

City Property now in the Inspector's Office.

One milk-jar, lactometer, and thermometer in case.

Respectfully submitted.

JOHN CAHILL,

Inspector of Milk.

REPORT

OF

SEALER OF WEIGHTS AND MEASURES.

To His Honor the Mayor and City Council of the City of Cambridge:—

THE undersigned most respectfully submits his First Annual Report for the year ending Dec. 1, 1873:—

During the year I have visited all stores, shops, manufactories, and places where scales, weights, or measures have been in use, and have tried, proved, adjusted, and sealed all scales, weights, or measures found in said places.

Number of places visited	560
,, ,, scales sealed	837
,, ,, ,, adjusted	602
,, ,, ,, condemned	84
,, ,, weights sealed	3,886
,, ,, ,, adjusted	1,172
,, ,, ,, condemned	113
,, ,, dry measures sealed	1,033
,, ,, ,, ,, adjusted	293
,, ,, ,, ,, condemned	34
,, ,, liquid measures sealed	1,386
,, ,, ,, ,, adjusted	371
,, ,, ,, ,, condemned	62
,, ,, yard-sticks sealed	118
,, ,, ,, adjusted	24
,, ,, ,, condemned	3
,, ,, charcoal-baskets sealed	9
,, ,, ,, condemned	1

The following table will show the business places visited during the year : —

Apothecaries	23	Groceries	197
Bakers	22	Groceries and Provisions	49
Bread and Cake	5	Grist Mill	1
Book Binderies	3	Hay and Grain	7
Brush Manufactory	1	Hay	4
Boiler Shop	1	Hotel	1
Blank-book Manufactory	1	Hardware	9
Brass and Iron Foundries	11	Ice Yards	2
Butchers	9	Ice Tools	1
Blacksmiths	3	Junk Stores	2
Confectionery	24	Laboratory	1
Cement	1	Machinists	5
Coal and Wood	20	News Depots	7
Cigars and Tobacco	8	Pork Packers	3
Clothing	10	Plumbers	5
Cracker Bakeries	2	Paint	6
Chemical Works	1	Paper Collar Factory	1
City Scales	5	Peruvian Syrup	1
Dry Goods	33	Stoves	8
Dress Makers and Milliners	5	Stone Wharf	4
Furniture	1	Soap Works	13
Fruit	4	Tanners	5
Fish	9	Tailors	4
Fancy Goods	9	Tin Shops	5
Glass Factories	2	Variety	27

The necessity of an annual visit by the Sealer to all stores, shops, manufactories, and business places, where scales, weights, and measures, are in use, will be seen by examining the above table. Of the 837 scales sealed throughout the city, 602 were out of order, and had to be properly balanced and adjusted.

Of the 84 scales condemned, I have found, upon investigation, that a number of them had been in the same condition in which I found them for years, the dealer promising from time to time to send them to the manufacturer to be repaired and adjusted before putting them again in use, but taking no further notice of them after the Sealer had left the premises. In every case of this kind coming to my notice, I condemned the scale, and forbade the further use of it under penalty, until repaired, adjusted, and sealed, as provided by law. This appears to have had the desired effect. A

number of those scales have since been brought to my office in good order to be sealed.

I would most respectfully call the attention of the City Council to the necessity of placing all the city scales under cover when practicable, in order that the public weighers appointed by the City may at any and all times, when called upon, give the true standard weight of coal, iron, hay, or other materials brought to them for the purpose of being weighed.

In the winter season, the scales being exposed as they now are to the weather, the accumulation of ice on the bearings and between the platform of the scale and the wood-work in which it is set, retards the action of the scale, sometimes varying from ten to two hundred pounds to a ton.

The law in relation to adjusting the tin or liquid measure I do not approve of, as justice cannot be done in all cases. The material from which the tin measures are made is generally very poor. In adjusting the measure, if too small, the bottom should be hammered out perhaps a quarter of an inch or more in the centre, and, if too large, hammered in ; and, in the further use of it, the bottom of the measure, coming in contact with the floor, and from the weight of the substances measured, falls back to its original position as before adjusting. I have found some measures bearing the city seal that would not compare with the standard ; it can be accounted for as above. The just and proper way, in my opinion, would be to condemn the measure, and the manufacturer would take more interest in making them true to the standard. It would be a public benefit, and a saving to the dealers.

The dry or wooden measure I have found a great variation from the standard, the half-bushel being in some instances over a quart too small. Some of those measures were new, and just purchased by the dealer at some wooden-ware store or from the manufacturer. In all cases where the measure could not be properly adjusted, I forbade the further use of it, and stamped it, in accordance with the fifth section of the Acts of 1870 relating to weights and measures.

In examining the above table it will be seen that the duties of the office have largely increased. Frequent applications have been made during the year by citizens to have goods purchased by

them weighed for the purpose of ascertaining whether or not they had received correct weight from the dealer; having no scale in the office suitable for that purpose, I could not give them the desired information. I have also had a large number of liquid measures brought to the office during the year to be sealed; having no water in the office, I was obliged to remove them to one of the neighboring stores.

Gentlemen, the time has arrived when the office of the City Sealer should be provided with all the instruments necessary to perform properly the duties of the office. Not only the interests of the citizens demand it, but the law requires it. The Sealer's office properly should be located in the City Hall. Having no room there suitable for the purpose, I would recommend that a room be fitted up in the new building now in course of erection by the City, and provided with the necessaries required.

The following extracts from the General Statutes and the Acts of the year 1870, relating to weights and measures, may be of some interest: —

Chap. 218, *approved May* 6, 1870.

Sect. 1. All persons using scales, weights, measures, or milk-cans, for the purpose of selling any goods, wares, merchandise, or other commodities, shall have them adjusted, sealed, and recorded by the sealer of weights and measures in the city or town in which they reside or have their usual place of business, and shall thereafter be responsible for the correctness and exactness of the same: *Provided*, *however*, that they shall have the right to have such scales, weights, measures, and milk-cans, tested and adjusted at the office of the sealer of weights and measures whenever they desire to do so.

Sect. 3. All persons using any scales, weights, measures, or milk-cans for the purpose of buying or selling any commodity, may have the same tested and sealed by the sealer of weights and measures in the city or town where they reside or have their usual place of business, at his office, whenever they desire to have it done.

General Statutes, Chap. 51.

SECT. 16. Whoever sells by any other weights, measures, scales, beams, or balances than those which have been sealed as before provided shall forfeit a sum not exceeding twenty dollars for each offence; and when by the custom of trade they are provided by the buyer, if he purchases by any other weights, measures, scales, beams, or balances, he shall be subject to a like penalty, to be recovered by an action of tort to the use of the complainant.

General Statutes, Chap. 49.

SECT. 61. The dry measure shall be the sole authorized public standard for measuring all fruits, vegetables, and nuts, when the same are sold by measure. Whoever sells such articles by any other than dry measure shall forfeit and pay a sum not exceeding ten dollars for every such offence.

SECT. 62. Chestnuts, walnuts, cranberries, and all other berries, when sold, shall be measured by the strike or level measure, in the same manner as flaxseed and other similar articles are measured.

Schedule of City Property contained in the Sealer's office.

One set Avoirdupois Weights.
,, Balance in Cabinet.
,, set Standard Dry Measures.
,, ,, ,, Wine Measures.
,, brass Yard Stick.
,, set Avoirdupois Weights in case (brass).
,, ,, Dry Measures (copper).
,, ,, Wine Measures (copper).
,, Yard Stick (wood).
,, pair Try Scales in case.
Forty fifty-pound weights (iron).
One Drill Stock and Drills.
,, Hammer.
,, Mallet.
,, Vise.
,, Wrench.
,, Knife.

Three Screw Drivers.
One pair Nippers.
,, ,, Cut Nippers.
,, Brand, letter C.
,, ,, two letter C.
Three Stamps, letter C.
Three Cases.
Four Files.
One Punch.
Half Bushel Flaxseed.
Small quantity of shot and lead.
One Charcoal Basket Measure in case.

Respectfully submitted.

JOHN CAHILL,
Sealer of Weights and Measures.

REPORT

OF THE

CAMBRIDGE WATER BOARD.

To the City Council of the City of Cambridge: —

In accordance with the requirement of the City Ordinance, the Cambridge Water Board herewith submit their Ninth Annual Report: —

st of the Water Works.

Net cost of the Water Works to Nov. 30, 1872, as per our last Report	$1,030,384.86
Expended for extension during the year ending Nov. 30, 1873.	219,030.21
Making the cost of the Water Works, Nov. 30, 1873, to be	$1,249,415.07

Comparative Receipts.

The receipts for water rates for the year ending Nov. 30, 1873, were	$146,117.32
The receipts for water rates for the year ending Nov. 30, 1872, were	127,201.30
Showing an increase for 1873 of	$18,916.02

Statement in brief, showing the entire transactions on account of the Water Works for the year ending Nov. 30, 1873: —

Received.

Total appropriations for extension account for the year 1873	$250,000.00
Received from water rates	146,117.32
Amount carried forward	$396,117.32

Amount brought forward	$396,117.32
Received from supply account, and shutting off and letting on water	14,834.66
Rent of house, &c.	157.00
Interest from Sinking Fund to June 30, 1873 . .	8,314.83
Balance of interest from City Treasurer on current account	2,195.62
	$421,619.43

Expended.

For extension account	$219,030.21
,, care and repair	28,002.09
,, supply account	18,388.42
,, interest on Water Debt to Nov. 30, 1873 .	65,604.00
,, appropriation transferred to Sinking Fund .	17,827.04
,, appropriation unexpended	13,142.75
,, balance showing gain in 1873	59,624.92
	$421,619.43

By this statement it will be seen that the sum of $59,624.92 will this year be added to our Sinking Fund, as the result of the year's business; and we congratulate the citizens of Cambridge that so much of the City debt as pertains to the Water Works is in such a fair way of being paid off at no distant day.

The following table will show the rainfall for the past two years, and also the height of the water in the pond: —

	Rainfall. 1871-72. Inches.	Rainfall. 1872-73. Inches.	Above low-water mark. 1871-72. Inches.	Above low-water mark. 1872-73. Inches.
December	3.18	3.93	12.8	37
January	1.93	5.97	16	43
February	2.30	4.04	13	41
March	3.09	3.36	15	45.36
April	2.68	3.08	27	43
May	3.51	4.09	26	36
June	4.64	.50	31	26
July	5.17	3.67	26	6.50
August	10.97	5.07	35	11.50
September	6.67	3.22	44	6
October	3.66	4.28	38	3
November	4.18	4.89	43	9.50
Total	51.98	46.10		

It appears that there were 5.88 inches less rainfall in 1873 than in 1872, and that there were 33.5 inches less water in the pond Nov. 30, 1873, than at the same time in 1872, and giving us in store at the commencement of this year about 167,500,000 gallons less water than we had last year at the same time.

By reference to the Superintendent's Report, it will be seen that we have pumped the past year 775,583,000 gallons, against 593,492,000 gallons the year before, being an excess the present year of 182,091,000 gallons.

The large increase in the amount of water used shows the wisdom of laying our new conduit four feet deeper in the pond, and at the same time shows us the importance of making such connections with the other sources of supply as are necessary to reinforce our present means.

The increase of consumption this year over last is mainly accounted for by good and satisfactory reasons; to wit: —

First. We have increased our number of supplies about one thousand, which, at the usual basis of estimate, would add five thousand of population to the number supplied with our water.

Second. We have added about four hundred hand-hose, which we have found by experience are large consumers of water, especially in dry times; indeed, during the dry month of June the Board were obliged to restrict the use of garden hose to six hours per day, three hours in the morning and three in the evening; and we were compelled to do this because the water was used so wastefully for irrigation that our pumping power was not sufficient to supply what was needed for domestic and mechanical purposes, with this additional drain upon us. We rejoice at the means to preserve the beauty of our city lawns and gardens during a time of drought; and we think that after our new pump is set, and both in working order, we can supply all the water that is really needful under proper regulations. The last reason we will give is,—

Third. We have used about 150,000 gallons per day over any former year in watering the streets. This use of the water has added very much to the attractiveness of our city, and the comfort of our citizens, and any others whose business or pleasure has brought them into our midst; and we do not think it will be the fault of this Department if all our main streets are not kept well watered, believing that in this economy and comfort meet together.

Work Commenced.

The work which was under contract at the beginning of the year, as set forth in our last Report, has been steadily prosecuted up to this time; and while, for reasons beyond our control, we are not as far along with some portions of our work as we expected we should be at this time when we made our last Report, yet we have the satisfaction of now reporting that the new engine-house is nearly completed. The new boilers are set, and at this time good progress is being made in setting up the new pumping-engine. The grading around the engine-house is being done, and all the work which was commenced is fast approaching completion.

New Main Pipe Laid.

During the year we have laid a new main pipe, of twenty inches diameter, from Walden Street, at Concord Turnpike, near the reservoir, down to Third Street in East Cambridge, a distance of about three miles. This will supply two great needs. *First*, by furnishing a large supply of water with increased pressure to the extreme portion of our city, and where many of our largest customers are located. *Second*, by the various connections made on the route it will reinforce and in a large degree duplicate the supply of water in other parts of the city.

We have also laid a new thirty-inch pumping main from the new engine-house to the reservoir; and in laying it preparations have been made for the use of a third pump whenever that may become necessary, by providing for the necessary connections therewith. By the laying of these new main pipes, our works, when the new pump is completed, will be duplicated throughout; and we think provision has thus been made for an ample supply of water for present wants in all parts of the city.

Extension Account.

The expenditures the past year for extension account have been unusually large; but they have all been in the line of *permanent improvements*, the benefits of which will extend over many years. It has been our design in all that has been done that it should be a part of a comprehensive plan, which, when completed, will give us

as good a system of water supply as can be found where the water is forced up to give a head for distribution.

There are several things yet to do before the plan will be complete. The principal things are as follows : —

1st. The connection of Little and Spy Ponds with Fresh Pond, so as to make available all the present sources of our water supply, and thus provide as far as we can against the possibility of a water famine.

2d. The thorough cleaning out of the shallow portions of Fresh Pond, where there are large quantities of vegetable matter deposited which is exposed to the sun every year during the time of low water, resulting in a fermentation of decayed matter, which cannot fail to contaminate our water. Our attention has been frequently called to this subject by some of our best citizens ; and we think the time has come when the importance of the subject calls for our early attention and action.

3d. The laying of another main supply pipe, coming down Brattle or Mount Auburn Streets to Brattle Square, thence down Main Street to Third Street, with a branch leading through Putnam Avenue, and other connecting streets, coming around into the main pipe again near the Universalist Church on Main Street.

4th. The ultimate extension of the sewer already commenced entirely around Fresh Pond, so as to cut off all filthy drainage into the Pond. This kind of drainage is constantly increasing as the regions around become more settled, and will soon demand serious attention.

While it is desirable to have every thing needed done at once, it is not our judgment that the city should be at the expense of doing too many things at one time, but should gradually finish the works, doing that which is the most needed first, and so on to the end.

It is our intention during the coming year to move our present large engine and boilers over to the new engine-house ; and, when this is done, it will be necessary to have the engine put in complete repair, to the end that we may have two pumps in the best possible condition. When this is done, we do not anticipate any large expenses in connection with the pumping department for several years.

For what we deemed good reasons, we have in our last two Annual

Reports made recommendations that the City Council should apply to the Legislature for certain additional rights; for some reason to us unknown no action has been taken in the matter. The importance of the right to erect tide-gates on Alewife Brook, and to shut out the fish, has come to be almost absolutely necessary; and we do therefore again repeat the request that action be taken in this matter at the earliest moment. We can only feel, after having strongly pressed this matter upon your attention so many times, that in this our active duty in it ceases, and all further responsibility rests with the City Council. We recommend the City Council to make application to the Legislature as follows: —

First. For leave to erect tide-gates at North Avenue on Alewife Brook, to shut out the fish from going above that point, and for right to raise the pond above high-water mark for storage purposes.

Second. That the City of Cambridge be granted the right to make and execute police regulations for the borders of Fresh Pond, in whatever town or city it may lie.

Third. That we be permitted to take water from such streams as can be conveniently brought to reinforce our present water supply, where by so doing we shall not interfere with any rights already granted to others.

The petition sent to you that a fence be put around the reservoir as a protection against accidents (one nearly fatal having just then occurred by a young person falling in), and which petition was referred to this Board, was duly considered by us; and it was determined to comply with the request. A contract was made for a suitable iron fence, and we are informed that it is nearly ready to be put up. We find that the beauty of the location, and the magnificent scenery from the reservoir, invite more and more visitors every year. This addition, making it a safe resort for children, will, no doubt, add still more to its popularity as a place of resort for health and pleasure.

At the proper time we intend to ask you for an appropriation which will enable us the ensuing year to make the following improvements: —

1st. To clean out the borders of Fresh Pond.

2d. To connect Fresh, Little, and Spy Ponds by a suitable conduit.

3d. To clean out Alewife Brook, and erect tide-gates (if the right is granted) thereon.

As we do not anticipate laying any large main pipes the coming year, it will be a good time to do this work on the plan of gradually doing what is necessary to complete the Water Works, aside from the fact that this work should be done at once on account of its importance.

For the details of the work done, and present condition of the Water Works, we would refer you to the Reports of the Registrar and Superintendent herewith submitted.

In closing our Report, it is our pleasure to repeat the testimony of former years as to the general faithfulness of those employed by this Board.

Respectfully submitted.

C. W. KINGSLEY,
H. L. EUSTIS,
J. WARREN MERRILL,
SAMUEL SLOCOMB,
GEORGE P. CARTER,
ISAAC BRADFORD,
F. H. WHITMAN,
Cambridge Water Board.

December 6, 1873.

CAMBRIDGE WATER WORKS.— TABULATED PUMPING RECORD, 1873.

Months.	Days.	Time.	Coal.	Revolutions.	Gallons.	Pounds.	Revolutions to 100 lbs.	Duty of 100 lbs. Coal.	Head, 132 feet. Foot-pounds.
		H. M.	Lbs.						
February . .	28	208 35	131,400	218,732	65,619,600	548,251,758.0	166.5	55,075,519	72,369,232,056
March	31	294 45	126,800	213,223	63,966,900	534,443,449.5	168.2	55,636,069	70,546,535,334
April	30	276 2	114,100	191,823	57,546,900	480,804,349.5	168.1	55,623,290	63,466,174,134
May	31	319 20	138,600	223,300	66,990,000	559,701,450.0	161.1	53,304,900	73,880,591,400
June	30	403 25	163,700	280,674	84,202,200	703,509,381.0	171.5	56,727,696	92,863,238,292
July	31	366 30	153,400	252,135	75,640,500	631,976,377.5	164.4	54,381,279	83,420,881,830
August . . .	31	322 3	148,600	219,063	65,718,900	549,081,409.5	152.5	50,472,664	72,478,746,054
September. .	30	311 20	135,400	212,615	63,784,500	532,919,497.5	157.0	51,953,747	70,345,373,670
October . . .	31	291 30	131,600	203,646	61,093,800	510,438,699.0	154.7	51,199,019	67,377,908,268
November . .	30	297 5	132,200	211,786	63,535,800	530,841,609.0	160.2	53,003,852	70,071,092,388
December . .	31	338 50	140,900	240,175	72,052,500	601,998,637.5	170.5	56,397,317	79,463,820,150
Total . . .	334	3,519 25	1,511,700	2,467,172	740,151,600	6,183,966,618.0	163.2	53,997,734	816,283,598,576

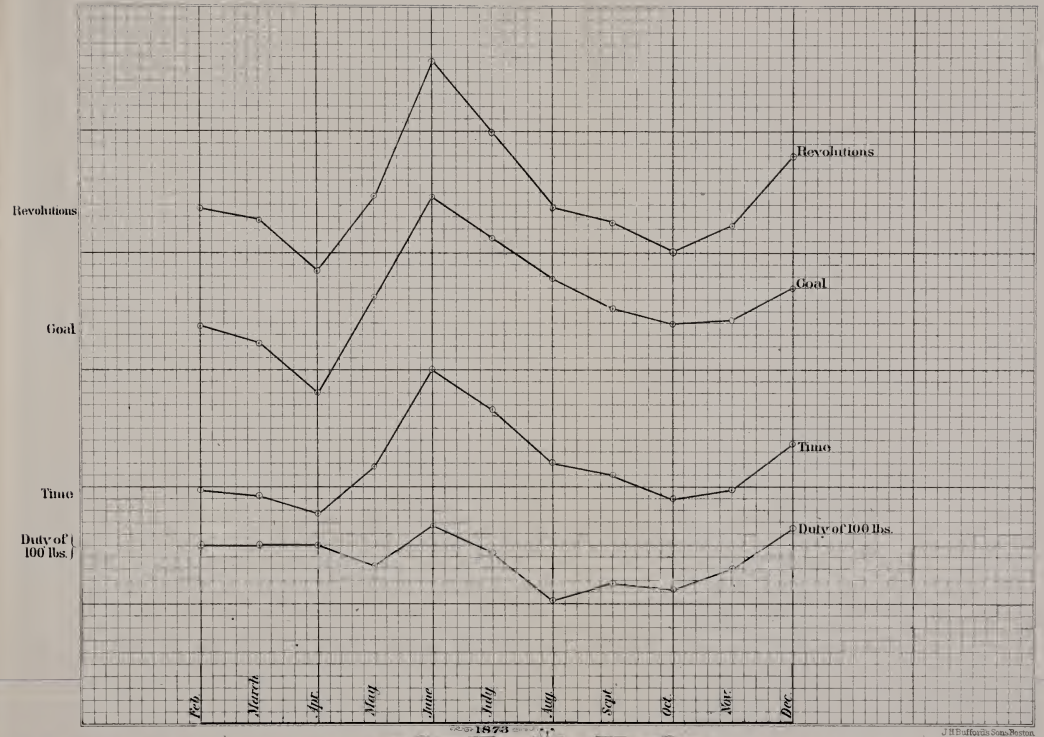


Diagram showing the Pumping results at the CAMBRIDGE WATER WORKS 1873 by Prof. H. L. Eustis a member of the Water Board

REPORT

OF

THE WATER REGISTRAR.

WATER REGISTRAR'S OFFICE,
CAMBRIDGE, *Dec.* 1, 1873.

To the Cambridge Water Board: —

GENTLEMEN, — The Water Registrar hereby respectfully submits his Report for the year ending Nov. 30, 1873, as required by an ordinance of the City.

Receipts.

Water rates	$146,117.32
Service pipe, laying and repairing	14,524.66
Rent of house, Pipe Yard	157.00
Fines, off and on water	310.00
Total	$161,108.98

All of which has been paid into the City Treasury.
The increased amount of income for the financial year over the previous year is $19,357.29

Expenditures.

The expenditures for the care and management of the Works for the year ending Nov. 30, 1873, have been as follows: —

For care and repairs	$9,447.74
For pumping service	12,980.41
For office expenses	5,573.94
Total amount	$28,002.09

The expenditures on the extension of the Works for the year ending Nov. 30, 1873, were $219,030.21
The expenditure on supply account was 18,388.42

The following table exhibits the yearly revenue received from water rates, since the purchase of the Works by the City: —

From April 28,	1865,	to Dec. 1,	1865	. . . .	$32,367.19
,, Dec. 1,	1865,	,,	1866	. . . .	40,073.27
,, ,,	1866,	,,	1867	. . . .	52,733.62
,, ,,	1867,	,,	1868	. . . .	63,747.42
,, ,,	1868,	,,	1869	. . . .	76,149.30
,, ,,	1869,	,,	1870	. . . .	92,606.95
,, ,,	1870,	,,	1871	. . . .	111,782.65
,, ,,	1871,	,,	1872	. . . .	127,201.30
,, ,,	1872,	,,	1873	. . . .	146,117.32
					$742,779.02

The water has been shut off from the premises of water takers for non-payment of rates, one hundred and seventy times. Of this number one hundred and fifty-five have been let on, leaving a balance of fifteen still remaining off.

STATEMENT

SHOWING THE NUMBER OF FAMILIES, STORES, MANUFACTORIES, &c, SUPPLIED WITH FRESH POND WATER TO DEC. 1, 1873.

8856 Families.
1070 Hand Hose.
651 Private Stables.
212 Stores.
77 Stationary Engines.
48 Saloons.
41 Offices.
29 School-houses.
29 Boarding Houses.
27 Meat Markets.
24 Barber Shops.

18 Blacksmith Shops.
17 Bake-houses.
17 Greenhouses.
15 College Buildings.
14 Soap Manufactories.
11 Livery Stables.
11 Churches.
11 Glass Works.
10 Machine Shops.
10 Public Halls.
9 Fish Markets.
9 Billiard Halls.
9 Lodging Houses.
8 Furniture Manufactories.
8 Horse Railroad Stables.
8 Lumber Wharves.
7 Club Rooms.
7 Banks.
7 Public Houses.
7 Cow Pastures.
6 Printing Offices.
6 Carpenters' Shops.
6 Coal Wharves.
6 Stone Yards.
5 Police Stations.
5 Carriage Manufactories.
5 Paint Shops.
5 Iron Foundries.
5 Harness Shops.
5 Marble Works.
5 Planing Mills.
5 Nurseries.
5 Plumber Shops.
4 Confectionery Manufactories.
4 Book Binderies.
4 Photograph Rooms.
4 Engine Houses.
4 Slaughter Houses.

4 Cooper Shops.
4 Post Offices.
3 Cigar Manufactories.
3 Steam Railroad Depots.
3 Steam Railroads.
3 Box Manufactories.
2 Organ Factories.
2 Tin Ware Manufactories.
2 Club Stables.
2 Bacon Works.
2 Tallow Factories.
2 Private Schools.
2 Brush Manufactories.
2 Laboratories.
2 I. O. of O. F. Halls.
2 Masonic Halls.
2 City Stables.
2 Aquariums.
2 Libraries.
2 Stereotype Foundries.
2 Boiler Manufactories.
2 Laundries.
2 Spring Bed Manufactories.
2 Sausage Manufactories.
2 Potteries.
1 Cider Refinery.
1 Chemical Works.
1 Ice Tool Manufactory.
1 Coffin Manufactory.
1 Fruit Preserving Company.
1 Cattle Yard.
1 Almshouse.
1 Brass Foundry.
1 Brewery.
1 Botanic Garden.
1 Brick Yard.
1 Currier Shop.
1 Color Manufactory.

1 City Hall.
1 K. of P. Hall.
1 City Wharf.
1 Cemetery.
1 Drain Pipe Manufactory.
1 Distillery.
1 G. A. R. Hall.
1 Gas Works.
1 Gymnasium.
1 House of Correction.
1 Lead Pipe Works.
1 Lard Works.
1 Museum of Comparative Zoölogy.
1 Lobster House.
1 Last Factory.
1 Ice Company.
1 Hardware Manufactory.
1 Paper Collar Manufactory.
1 Rolling Mill.
1 Sugar Refinery.
1 Swine Yard.
1 Grapery.
1 Bleachery.
1 Car Wheel Company.
1 Frame and Moulding Manufactory.
1 Oiled Hat and Clothing Manufactory.
1 Shoe Manufactory.
1 Milk Shed.
1 Freight Depot.
1 Conservatory of Music.

STATEMENT

SHOWING THE NUMBER AND KIND OF FIXTURES CONTAINED WITHIN THE PREMISES OF WATER TAKERS IN THE CITY OF CAMBRIDGE, DEC. 1, 1873.

10051 Faucets.
2542 Water Closets.
2522 Wash Bowls.

1410 Bath Tubs.
1252 Wash Tubs.
321 Slop Closets.
85 Garden Hydrants for Hand Hose.
78 Yard Hydrants for Family Use.
6 Tumbler Washers.
16 Private Fountains.

During the year, six meters have been applied, and three removed from the premises of water takers, making the total number now in use eighty-four. They are attached to a variety of manufacturing establishments as follows : —

WHERE ATTACHED.	SIZE OF METERS.						
	⅝ in.	¾ in.	1 in.	1½ in.	2 in.	3 in.	4 in.
A. H. Hews & Co.					1		
Bullard & Scott				1			
Botanic Garden			1				
Bay State Glass Co.					1		
Batchelder, Moore, & Co.				1			
Braman, Shaw, & Co.				1			
Boston and Albany R. R. Co.					1		
Boston and Lowell R. R. Co.			1		3		1
Boston Chemical Works					1		
Boston Rolling Mill					1		
Boston Stamping and Manufacturing Co.			1				
Boston Car Wheel Co.		1					
Beal & Hooper					1		
B. P. Clark & Co.			1				
Bay State Color Co.					1		
C. L. Jones			1				
C. B. French			1				
Cambridge Gas Light Co.		1					
Cambridge Stamping Co.	1	1					
C. H. North & Co.					1		
Curtis Davis				1			
Doe & Hunnewell				1			
Edgar L. Kinsley					1		
Fitchburg R. R. Co.					1		
Francis Draper & Co.		1					
F. Geldowsky				1			
George Woods & Co.				1			
House of Correction					1		
H. O. Houghton & Co.			1				
Henry Thayer & Co.					1		
Hancock & Greely				1			
H. M. Clark		1					
Holyoke House					1		
John Conlan			1				
John P. Squire & Co.		1			1		
John Wilson & Son			1				
James D. Osborn					1		
John Reardon & Sons			1				
J. J. Gray			1				

WHERE ATTACHED.	SIZE OF METERS.						
	⅝ in.	¾ in.	1 in.	1½ in.	2 in.	3 in.	4 in.
James C. Davis			1				
James Lee			1				
Leonard Cox		1					
Little & Brown			1				
Mt. Auburn Cemetery				1	1		
Mason & Hamlin			1				
Middlesex Bleachery		1					
New England Glass Co.					1		
New England Brick Co.					2		
O. S. Bullock			1				
Prospect House				1			
Revere Sugar Refinery					1		
Reversible Collar Co.					1		
Shawmut Iron Works		1					
Sylvester Tower			1				
Sortwell & Co.					1		
S. M. Cofran					1		
St. Mary's Church					1		
Thayer Club		1					
T. S. Huckins			1				
Theodore Downing			1				
Union Glass Co.		1	2				
Union Railway Co.		5	2	2	1		
Woodbury & Co.					1		
Welch, Bigelow, & Co.		1					
Whittemore & Hale			2				

The annual inspection of all buildings supplied with Fresh Pond water has been made as required by the City ordinance, and a very few slight leaks only were discovered. The fixtures throughout the city are believed to be in more complete repair than in any former year.

Respectfully submitted.

A. F. FIFIELD,

Water Registrar.

REPORT

CONCERNING

THE ACCOUNTS OF THE WATER REGISTRAR.

In Cambridge Water Board,
December, 1873.

The Committee appointed to examine the accounts of the Water Registrar for the financial year ending Nov. 30, 1873, herewith submit the following

REPORT:

Your Committee have examined the books and accounts of the Water Registrar, and compared them with the vouchers, and find that the same are correct.

Respectfully submitted.

SAMUEL SLOCOMB,
GEO. P. CARTER, } *Committee.*

REPORT

OF THE

SUPERINTENDENT OF THE WATER WORKS.

To the Cambridge Water Board:—

GENTLEMEN, — The fiscal year of 1873 having expired on the 30th day of November, the Superintendent of the Cambridge Water Works very respectfully presents to your Honorable Board his Annual Report for that year, it being the ninth year of the control of the Works by the City. In making this Report, I experience much pleasure in being able to inform you that the Works in my charge continue in a highly prosperous and satisfactory condition. No very serious damage has occurred in any of the branches of the work, with the exception of some unimportant breakages on lines of the oldest and smallest pipes. The active management of the Works remains unchanged, the same officers occupying the positions they have filled for many years.

Engine House.

We are now pumping the water consumed in the City with one of H. R. Worthington's Duplex Pumping Engines, of a daily capacity of 5,000,000 gallons. Size of steam cylinder, 21 inches for high pressure, and $36\frac{1}{8}$ inches for low pressure, with a four-feet stroke. Size of water cylinder, 32 inches. Speed of engine, 47 strokes per minute. Amount of water discharged at each stroke, say 300 gallons. The only reserve pumping power that we have at present consists of two old style Worthington pumping engines, put in during the year 1856. The help required at the pumping works consists of one engineer, one assistant, and two

firemen. There were 775,583,000 gallons of water pumped the last year, consuming 1,535,400 pounds of coal; this includes banking fires. The average number of gallons pumped daily was 2,124,884. The pumping time for the ten months of the year while using our large pump was 3,159 hours 15 minutes, being a daily average of 10 hours 25 minutes.

Pond.

The water in the pond is of the very best quality; and I think all complaints that have been made in regard to the water can be traced directly to the large amount of vegetable matter which has been deposited in the shallow part of the pond. If this was removed, we should have the purest water of any city in the vicinity, and no doubt satisfactory to all our consumers for domestic or manufacturing purposes. The gates at the outlet on Alewife Brook have been closed, to prevent the drainage of the meadows from flowing into the pond, with the exception of the time required by the laws of the State for them to be kept open, to allow the fish to pass in and out.

The following table shows the height of the water in the pond at the end of each month of the year: —

December	17	inches below the highest point known.
January	11	,, ,, ,, ,, ,, ,,
February	13	,, ,, ,, ,, ,, ,,
March	$8\frac{5}{8}$	,, ,, ,, ,, ,, ,,
April	11	,, ,, ,, ,, ,, ,,
May	18	,, ,, ,, ,, ,, ,,
June	28	,, ,, ,, ,, ,, ,,
July	$47\frac{1}{2}$	,, ,, ,, ,, ,, ,,
August	$42\frac{1}{2}$	,, ,, ,, ,, ,, ,,
September	48	,, ,, ,, ,, ,, ,,
October	51	,, ,, ,, ,, ,, ,,
November	$44\frac{1}{2}$	,, ,, ,, ,, ,, ,,

Force Main.

The 24-inch force main is in good condition; only a few slight leaks have occurred on it during the year. A new 30-inch force main has been laid the present season, leading from the new engine-house to the reservoir, and will be ready for use when the new works are completed.

Reservoir and Stand-Pipe.

The small reservoir has been thoroughly cleaned out, and a new copper strainer has been placed on the 16-inch outlet. The walls around both reservoirs have been repaired and blue-washed, and are now in good condition. A cap has been placed on the top of the stand-pipe, which will answer for an air-chamber to afford a higher pressure on the distribution pipes, with a gauge to ascertain the pressure used. The height of the stand-pipe above marsh level at the overflow is 120 feet, and of the reservoir 77 feet.

Distribution Pipes.

About $8\frac{1}{2}$ miles of pipe have been laid the present season, making the total length of pipe in the city at the present time about $80\frac{1}{2}$ miles.

A new six-inch pipe has been laid in Washington Street, and the old four-inch has been abandoned. This was found to be necessary on account of the filling up of this district, which left the old pipe twelve feet below the surface of the ground, occasioning a great many leaks which were difficult to get at and repair. In Austin Street a six-inch pipe has been laid, and the three-inch pipe removed. This was very much needed for a better supply of water for fire purposes.

Gates.

All the gates have been examined, and packed to prevent freezing, and 86 new ones have been added to the Works. Six decayed boxes have been removed and replaced by new ones.

Hydrants.

Thirty-three old pattern flush hydrants have been set the present season. Under an order of the City Council, thirty-three post hydrants have been set this year, with the three set the previous year making a total of thirty-six post hydrants. The post hydrants are more satisfactory than the old pattern hydrants, and have each two outlets, yielding a better supply of water for fire purposes.

Meters.

Six meters have been applied to the premises of water takers, and three have been removed, making the total number now in use eighty-four.

Drinking Fountains.

One drinking fountain has been added the past season, making the total number fifteen. They are located as follows: —

North Avenue, corner of Walden Street.
Cambridge Common.
Harvard Square, opposite the store of Alfred Wood.
Brattle Square, opposite Brewer's Block.
Atwood's Corner, junction Cambridge and Hampshire Streets.
Cambridge Street, corner Fifth.
Bridge Street, junction of Cambridge.
Third Street, between Main Street and Broadway.
Hampshire Street, junction Broadway.
Broadway, corner Norfolk Street.
Lafayette Square, front of Universalist Church.
Central Square, opposite the store of J. A. Holmes & Co.
Central Square, opposite the store of D. U. Chamberlin & Co.
Fort Washington.
Putnam Avenue, corner Pearl.

Two stone drinking-troughs have been presented to the City this year: one by Thomas H. Brewer, Esq., which is located in Brattle Square; the other by D. H. Thurston, Esq., which is located in East Cambridge, in the square at the junction of Cambridge and Bridge Streets. These have proved themselves to be a great public convenience. We hope there will be other public-spirited citizens who will follow their example.

Stand Pipes for Street Watering.

Twenty-one upright stand-pipes encased in a cast-iron barrel, with a valve at the top and a swing arm to fill water-carts, have been erected the present season, and are located as follows: —

Main Street, west of Quincy Street.
North Avenue, near the Common.
,, ,, ,, Forest Street.
,, ,, ,, Beech Street.
,, ,, ,, Day Street.

Concord Avenue, junction Garden.
Near University Press.
Inman, near Broadway.
Broadway, corner Winsor Street.
Columbia Street.
Green, near Western Avenue.
Cambridge, at Atwood's Corner.
Cambridge Street, 20 feet west of Warren.
Gore Street, opposite School-house.
Otis Street, near Third.
Junction Bridge and Cambridge Streets.
Fifth Street, near Thorndike.
North Avenue, near Shepard.
Dana, corner Chatham Street.
Brattle, corner Sparks Street.
Broadway, corner Sixth.
Dublin Street, near Fitchburg Railroad, for filling locomotives that run on the track.

These have been of great convenience. They are of capacity to deliver 500 gallons in four minutes, being a great saving of time and water over the old method of drawing water from the flush hydrants. There is also another advantage, as they are more easily kept in order, and can in emergency be used for the extinguishment of fires.

Service Pipes.

Diameter in Inches.	Number of Pipes.	Length in Feet.	Totals.	
			Number of Pipes.	Length in Feet.
2	57	1,187	57	1,187
1½	12	1,012	12	1,012
1¼	8	775	8	775
1	53	1,585	53	1,585
¾	364	29,982	364	29,982
Aggregate			494	34,541

The total number of supply pipes is 5,819.
About 6½ miles of supply pipe have been laid the present season.

STATEMENT OF LOCATION, SIZE, AND NUMBER OF FEET OF PIPE LAID IN 1873.

IN WHAT STREET.	Diameter in Inches.	Feet of Pipe.
Athens	4	86
Austin	6	1,857
Banks	6	280
Banks	4	60
Bennett	4	48
Boardman	4	168
Brewery	4	192
Central Square	4	20
Chestnut	4	510
Church	6	742
Clay	6	181
Cogswell Avenue	4	12
Concord Avenue	6	22
Concord Avenue and Cambridge Street (cement)	20	15,723
Crescent	6	26
Crescent	4	641
Crescent Avenue	6	142
Dublin	12	2,728
Dublin	4	80
Earl	4	238
Ellery	4	10
Elmer	4	430
Fairfield	4	350
Fairmont	4	184
First	3	166
Florence	4	64
Follen	4	134
Foster	4	407
Fourth	4	115
Frank	4	416
Gardner	4	290
Green	4	114
Hamilton	4	221
Harvard	4	40
Hollis	6	798
Houghton	6	285
Hubbard Avenue	6	819
Inman	4	30
Jay	4	123
Lambert Avenue	6	60
Langdon	4	170
Laurel	4	148
Meacham	4	444
Montgomery	4	72
Mount Auburn	4	16
Murray	4	908
Murdock	4	168
North Avenue	6	72
North Avenue	4	12
North Avenue	3	230
Norton	4	210

STATEMENT OF LOCATION, SIZE, &c. — *Continued.*

IN WHAT STREET.	Diameter in Inches.	Feet of Pipe.
Oxford	4	12
Otis	4	160
Pearl	4	50
Pine	4	120
Plymouth	4	238
Preston	4	273
Pumping Main	30	1,900
Putnam Avenue	4	238
Putnam Place	4	368
Raymond	6	305
Rice	6	488
Sacramento Court	4	255
Sands	4	253
School	4	12
Seventh	4	288
Shawmut Avenue	6	210
Short	4	229
Sixth	4	118
Somerset	4	175
South	4	105
Spruce	10	700
Spruce	8	150
Thorndike	6	700
Thorndike	3	300
Walden	20	2,700
Walden	8	1,676
Walden	4	12
Walnut Court	3	47
Washington	6	1,110
Western Avenue	4	306
White	4	480
Winsor	6	478

GATES.

IN WHAT STREET.	Diameter in Inches.	Number.
Athens	4	1
Austin	6	4
Austin	4	2
Austin	3	1
Banks	6	1
Brewery	4	2
Cambridge	20	1
Cambridge	10	1
Cambridge Common	20	2
Cambridge Common	6	1
Cement Pipe	20	4
Cement Pipe	10	4
Cement Pipe	8	4
Cement Pipe	6	4

STATEMENT OF LOCATION, SIZE, &c. — *Continued.*

IN WHAT STREET.	Diameter in Inches.	Number.
Central Square	4	1
Chestnut	4	3
Church	6	2
Clay	6	1
Concord Avenue	20	2
Concord Avenue	10	2
Concord Avenue	6	6
Crescent	6	1
Crescent	4	1
Crescent Avenue	6	1
Dublin	6	12
Earl	4	1
Elmer	4	1
Fairfield	4	1
Fairmont	4	1
First	3	2
Foster	4	1
Fourth	4	1
Frank	4	1
Gardner	4	2
Green	4	1
Hamilton	4	2
Harvard	4	1
Hollis	6	2
Houghton	6	1
Hubbard Avenue	6	1
Jay	4	1
Laurel	4	1
Meacham	4	1
Mount Auburn	4	1
Murdock	4	1
North Avenue	4	1
Norton	4	1
Otis	4	1
Pine	4	1
Potter	6	1
Pumping Main	30	1
Putnam Place	4	1
Raymond	6	1
Rice	6	1
Sacramento Court	4	1
School	4	1
Seventh	4	1
Short	4	1
Sixth	4	1
Somerset	4	1
Spruce	6	1
Thorndike	6	2
Thorndike	4	1
Walden	20	1
Walden	8	1
Washington	6	2
Western Avenue	4	1
Winsor	6	1
Winsor	4	1

STATEMENT OF LOCATION, SIZE, &c. — *Continued.*

BLOW-OFF PIPES.

IN WHAT STREET.	Diameter in Inches.	Number.
Boardman	1½	1
Chestnut	1½	1
Crescent	1½	1
Crescent Avenue	1½	1
Earl	1½	1
Elmer	1½	1
Meacham	1½	1
Montgomery	1½	1
Plymouth	1½	1
Putnam Place	1½	1
Thorndike	1½	1
Walnut Court	1½	1
White	1½	1

RECAPITULATION.

1,900	feet	30-inch.
21,123	„	20 „
28	„	12 „
700	„	10 „
1,826	„	8 „
8,647	„	6 „
10,751	„	4 „
743	„	3 „

GATES.

1	30-inch.
10	20 „
7	10 „
5	8 „
46	6 „
42	4 „
4	3 „

BLOW-OFF PIPES.

13	1½ „

STATEMENT

OF STOCK ON HAND EXCLUSIVE OF TOOLS AT SHOP.

Galvanized Pipe.

160 feet 2-inch.
600 feet 1½-inch.
400 feet 1¼-inch.
800 feet 1-inch.
400 feet ¾-inch.
100 feet ½-inch.
300 feet ¾-inch, coated.

Fittings for Service Pipes.

17 1-inch hose bibbs.
17 ¾-inch hose bibbs.
20 ¾-inch compression bibbs.
60 ½-inch compression bibbs.
23 1¼-inch screw cocks.
26 1-inch screw cocks.
60 ¾-inch screw cocks.
10 M. & F. cocks for 20-inch cement pipe.
1 2-inch cock.
3 1½-inch cocks.
3 1¼-inch cocks.
12 1-inch cocks.
20 1-inch stop and wastes.
34 ¾-inch stop and wastes.
10 ¾-inch hose nipples.
50 solder nipples and unions for lead pipe.
11 garden hydrant stop and wastes.
7 fire hydrant stop and wastes.
5 1½-inch corporation cocks.
4 ¾-inch corporation cocks.
100 2-inch T's.
50 2 × 1½-inch T's.
50 2 × 1¼-inch T's.
50 2 × 1-inch T's.
40 1½-inch T's.
50 1½ × 1¼-inch T's.
40 1½ × 1-inch T's.
40 1½ × ¾-inch T's.
90 1¼-inch T's.
50 1¼ × 1-inch T's.
38 1¼ × ¾-inch T's.
80 1-inch T's.
80 1 × ¾-inch T's.
450 ¾-inch T's.
300 ¾ × ½-inch T's.
55 ½-inch T's.
40 2-inch elbows.
80 1½-inch elbows.
90 1¼-inch elbows.
150 1-inch elbows.
225 ¾-inch elbows.
77 ½-inch elbows.
100 2-inch couplings.
150 1½-inch couplings.
100 1¼-inch couplings.
190 1-inch couplings.
120 ¾-inch couplings.
400 ½-inch couplings.
100 1-inch air chambers.

400 ¾-inch air chambers.
100 ½-inch air chambers.
68 1-inch street elbows.
250 1-inch street elbows.
23 2-inch crosses.
10 2 × 1½-inch crosses.
2 2 × 1¼-inch crosses.
15 2 × 1-inch crosses.
13 1½ × 1¼-inch crosses.
40 1½ × 1-inch crosses.
40 1½ × ¾-inch crosses.
40 1½-inch crosses.
50 1¼-inch crosses.
25 1¼ × 1-inch crosses.
25 1¼ × ¾-inch crosses.
18 1-inch crosses.
25 1 × ¾-inch crosses.
20 ¾-inch crosses.
1 garden hydrant.
134 ¾-inch socket ends.
150 1-inch clips.
800 ¾-inch clips.
150 ½-inch clips.
30 2-inch unions.
50 1½-inch unions.
50 1¼-inch unions.
35 1-inch unions.
35 ¾-inch unions.
20 2-inch nipples.
100 1½-inch nipples.
100 1¼-inch nipples.
50 1-inch nipples.
230 ¾-inch nipples.
400 ½-inch nipples.
12 1½-inch plugs.
20 1¼-inch plugs.
80 1-inch plugs.
100 ¾-inch plugs.
50 ½-inch plugs.
24 2 × 1½-inch bushings.
24 2 × 1¼-inch bushings.
17 2 × 1-inch bushings.
24 2 × ¾-inch bushings.
24 1½ × 1¼-inch bushings.
24 1½ × ¾-inch bushings.
24 1¼ × 1-inch bushings.
24 1¼ × ¾-inch bushings.
40 ¾ × ½-inch bushings.
100 1-inch lock nuts.
150 ¾-inch lock nuts.
50 ½-inch lock nuts.

Miscellaneous.

4 wagons.
2 hand carts.
2 horses.
3 sets harnesses.
1 pung.
1 cylinder stove.
1 boom derrick.
2 upright derricks.
1 thawing stone.
1 grindstone.
1 platform scale.
2 bench vises.
1 tool chest.
1 large hand pump.
12 lanterns.
6 wheelbarrows.
35 feet chain.
1 dwelling-house at yard.
1 dwelling-house at pond.
1 engine-house ,,
1 coal-shed ,,

Tools.

4 plates and dies.
2 scroll plates.
4 pipe cutters.
2 drilling machines.
2 ratchets.
12 pairs tongs.
3 pipe wrenches.
5 monkey wrenches.
2 pipe vises for hand carts.
30 picks.
20 shovels.
15 rammers.
8 crow-bars.
2 paving hammers.
4 trowels.
3 saws.
3 axes.
3 sledge hammers.
3 thawing pumps.
8 lump hammers.
3 sets caulking tools.
6 gate wrenches.
3 hydrant wrenches.
4 blow-off wrenches.
3 supply wrenches.
4 hydrant goose necks.
4 furnaces.
15 stone drills.
1 spirit level.
5 bundles packing.
2 tons lead.

Tools at Engine House.

2 globe lamps.
3 lanterns.
6 lamp chimneys.
1 bench vise.
1 hand vise.
2 screw wrenches.
13 iron wrenches.
19 socket wrenches.
2 gate wrenches.
3 die plates.
2 sets dies.
2 sets taps.
1 ratchet.
1 breast drill.
1 drill brace.
19 drills.
12 cold chisels.
10 caulking tools.
2 jack screws.
4 crow-bars.
1 sledge.
1 copper hammer.
1 hand hammer.
2 coal hammers.
1 forge.
1 anvil.
8 pairs tongs.
15 pairs pipe tongs.
1 solder iron.
2 ladles.
1 differential block.
1 turn buckle.
1 carpenter's chest.
2 hand planes.
3 hand saws.
1 axe.

1 square.
1 drawing-knife.
1 chisel.
8 gouges.
2 bitt stocks.
10 bitts.
3 screw-drivers.
1 grindstone.
1 set fire tools.
3 shovels.
1 spade.
1 rake.
1 prong hoe.
1 scythe and snath.
1 iron roller.
3 water-pails.
2 whitewash brushes.
4 ladders.
1 step ladder.
1 steam trap.
2 screens.
2 platform scales.

Stock at Engine House.

20 pounds bar iron.
30 feet pipe.
12 T's.
36 elbows.
40 nipples.
40 couplings.
4 unions.
30 pounds lead.
13 pounds Babbitt metal.
200 pounds bolts and nuts.
5 pounds washers.
9 pounds eye bolts.
1 rotary pump.
6 valve springs.
4 pounds sheet brass.
6 pounds screws.
10 pounds cut nails.
10 oil-cans.
3 gallons kerosene.
30 gallons lard oil.
50 pounds tallow.
30 pounds sheet rubber.
15 9-inch rubber valves.
4 5-inch rubber valves.
50 $2\frac{1}{2}$-inch rubber valves.
4 36-inch rubber gaskets.
2 pairs rubber boots.
20 pounds jute packing.
12 pounds hemp packing.
70 pounds Martin's packing.
1 coal car.
1 wheelbarrow.
2 desks.
3 spittoons.
560 tons Cumberland coal (2,000 pounds per ton).
3,000 pounds old iron.

Stock at Pipe Yard.

9 24-inch sleeves.
2 20-inch sleeves.
4 12-inch sleeves.
2 10-inch sleeves.
2 8-inch sleeves.
24 6-inch sleeves.
18 4-inch sleeves.
4 3-inch sleeves.
2 24-inch sleeves, clamp.
4 12-inch sleeves, clamp.
3 10-inch sleeves, clamp.
2 8-inch sleeves, clamp.
1 6-inch sleeves, clamp.
3 4-inch sleeves, clamp.
3 3-inch sleeves, clamp.
24 6-inch double offsets.
4 12-inch caps.
14 8-inch caps.
8 6-inch caps.
2 4-inch caps.
29 lengths 30-inch pipe, 12 ft. to a length.
5 lengths 24-inch pipe, 12 ft. to a length.
3 lengths 20-inch pipe, 12 ft. to a length.
10 lengths 12-inch pipe, 12 ft. to a length.
10 lengths 10-inch pipe, 12 ft. to a length.
19 lengths 8-inch pipe, 12 ft. to a length.
640 lengths 6-inch pipe, 12 ft. to a length.
30 lengths 4-inch pipe, 12 feet to a length.
4 lengths 3-inch pipe, 12 feet to a length.
1 12 × 12-inch cross.
2 12 × 6-inch crosses.
3 8 × 4-inch crosses.
4 6 × 6-inch crosses.
10 6 × 4-inch crosses.
20 4 × 4-inch crosses.
1 3 × 3-inch cross.
2 24 × 24-inch T's.
1 24 × 12-inch T.
1 20 × 20-inch T.
3 20 × 12-inch T's.
1 12 × 12-inch T.
1 12 × 10-inch T.
3 12 × 6-inch T's.
1 10 × 10-inch T.
2 10 × 6-inch T's.
8 8 × 8-inch T's.
4 8 × 4-inch T's.
3 6 × 6-inch T's.
18 6 × 4-inch T's.
24 4 × 4-inch T's.
2 $\frac{1}{8}$ 20-inch bends.
1 $\frac{1}{8}$ 10-inch bend.
1 $\frac{1}{8}$ 8-inch bend.
34 $\frac{1}{8}$ 6-inch bends.
2 $\frac{1}{16}$ 24-inch bends.
1 12 × 12-inch reducer.
2 12 × 10-inch reducers.
3 10 × 8-inch reducers.
2 10 × 6-inch reducers.
9 6 × 4-inch reducers.
9 4 × 3-inch reducers.
4 6-inch offsets.
15 4-inch offsets.

6 24-inch gates.
2 20-inch gates.
1 16-inch gate.
2 12-inch gates.
2 10-inch gates.
10 6-inch gates.
5 4-inch gates.
1 4-in. meter (Worthington).
2 2-in. meters (Worthington).
2 $1\frac{1}{2}$-in. meters (Worthington).
2 $1\frac{1}{4}$-in. meters (Worthington).
3 1-in. meters (Worthington).
5 $\frac{3}{4}$-in. meters (Worthington).
3 $\frac{5}{8}$-inch meters (Navara).
12 small gate-frames and covers.
8 large gate-frames and covers.
8 fire hydrants (flush).
5 fire hydrants (post).

In closing this Report, I am proud to say that since the City has acquired possession of the Works they have steadily increased year by year, and are now, in all the departments, in a highly satisfactory and prosperous condition. The utmost harmony has prevailed between this and all other departments of the city with which we are brought in contact. In my experience in these Works I am more than ever persuaded that to attain excellence in any pursuit or occupation, the natural bent of genius must be followed, and its dictates obeyed.

Respectfully submitted.

S. W. DUDLEY,

Superintendent.

December, 1873.

REPORT

OF

THE SCHOOL COMMITTEE FOR 1873.

Dr. A. P. Hooker, a member of this Committee, died the last day of the year. The unexpected intelligence of his death was a sad surprise to his associates of the School Committee, no less than to the people in whose midst he had worked long and successfully.

SCHOOL-HOUSES.

The Committee are conscious of a debt of gratitude to the Committee on Public Property for their prompt and energetic action in the thorough renovation of three of the Grammar School-houses. This long-deferred yet necessary work — recommended by the Mayor at the commencement of the year, and authorized, not without opposition, by the City Council — was superintended by Alderman Collins, a considerable sum being undoubtedly thereby saved to our well-guarded treasury. The excellence of the results is sufficient evidence of the value of his supervision.

FREE DRAWING.

Another year has passed without that free instruction in industrial and mechanical drawing required by the statutes of the State. The School Committee have been guided in this matter by a desire to avoid unnecessary expense to the City, and have thought it better to await the chances of a permanent

location in the new building erecting in Ward Four, than to incur the large expense of temporary quarters. We hope that another year may find us in condition to renew a course of instruction which has already proved of much service to the City.

TRUANT OFFICERS.

A recent Act of the Legislature made it the duty of the School Committee in the latter part of the year to elect truant officers and define their duties, — this task has been accomplished. Of the five officers appointed, three have already faithfully served the City in the same capacity. In order to give these officers powers at least equal to those enjoyed by them when acting as policemen detailed for service as truant officers, we petitioned the Mayor and Aldermen to appoint our officers constables. Unfortunately for the schools, doubts as to the legality of such action prevented an immediate reply to our request; and the subject was referred to the next City Government. It should be noted that in the discussion upon this petition it was shown that should these officers be appointed constables, fees of considerable amount would pass into the City Treasury, which now go into the pockets of the police force of the City. The rules of the School Committee provide that all fees collected by truant officers shall be paid over to the City; while by ordinance of the City constables are entitled to all fees received by them.

The objections which have so much weight in this city fortunately do not prevail in the neighboring city of Boston, with its greater liability to trouble in this direction; for there the truant officers are now, and have been from the first, constables.

The work already done by these officers under the new regulations is of great value; they have made good progress in a list of children employed, contrary to law, in the factories and shops of the city, the first step necessary to enable the School Committee to insist that the neglect of an ignorant parent or the avarice of a selfish employer shall not compel any child to forego its right to education in the public schools.

SUPERINTENDENT OF SCHOOLS.

Mr. E. B. Hale, Superintendent of Public Schools, resigned his office the 1st of October. The Committee were fortunately able to secure the benefit of a part of his time until the 1st of January, 1874. Mr. Hale was elected Superintendent and began his work here early in the year 1868, soon after the City Council, acting upon their own responsibility and not upon a request of the School Committee, had wisely established this office.

A resolution was entered upon the records of the Committee, expressing our sense of the great value of services rendered. The words of this record need not be repeated here. There is not one of the many improvements in our school buildings, not one of the changes in our remodelled courses of Grammar and Primary School work, that has not been the better done by reason of his assistance. It is not too much to say that several of our best reforms would not even yet have been accomplished, if we had not had his constant supervision, great practical acquaintance with the best methods of teaching, and prudent regard for the burdens as well as the resources of the City. A simple enumeration of Mr. Hale's services would be a sufficient argument for the necessity of professional supervision.

A few words with regard to this office will not be out of place in a Report which "shall contain such statements and suggestions in relation to the schools as the Committee deem necessary or proper to promote the interests thereof." By law the City Council may require the School Committee to appoint a Superintendent of Public Schools; by the same law the School Committee are alone authorized to fix the salary. If a Superintendent is not appointed, — that is, if the office is not established by the City Council, — "the School Committee are entitled to a compensation of one dollar a day for the time they are actually employed in discharging the duties of their office, together with such additional compensation as the City may allow." In the original legislation regarding the office, it was supposed that the pay of the School Committee would make them reluctant to establish the office; the power to create the office was therefore placed in the hands of the City Council. The intention of the

law was evidently to protect the office against the self-interest of the School Committee.

In 1870, when there was a probability that the office would become vacant, a Sub-Committee of this Board was directed to consider the expediency of asking for the abolition of the office. That Committee, after mature deliberation, declared the office to be, in their opinion, indispensable.

The Rev. Dr. Mason, a member of that Sub-Committee, — certainly the most vigorous opponent of the ordinance that created the office, — finding in subsequent experience evidence of his mistake, joined heartily in the report made by the Committee. The City Council of that day left the question, where it would seem properly to belong, in the hands of those most familiar with the needs of the public schools. The increase of salary at this time from $2,500 to $3,000 did not excite opposition.

When Mr. Hale's resignation was announced at the September meeting, a committee was at once appointed to prepare and submit, as soon as possible, a list of names of candidates for the vacant place; this list was reported at a meeting held 11th December. At the close of the ballot one name was found to be the unanimous choice, a choice that involved an increase in salary.

This Report is not the place in which to discuss the qualifications of the man chosen: these have not been called in question, even in the debates of the City Council.

On the 16th December, an order was introduced in the Common Council, directing a committee to report an ordinance repealing the ordinance establishing the office of Superintendent of Schools. The member introducing the order offered certain explanations in the course of which it was said, "that it was an outrage on the tax-payers to have to pay this enormous sum for a mere figure-head;" "if the citizens submitted to this imposition, they would have to pay $6,000 next year;" "that the Council should protest against the extortion," — language so intemperate that we are almost compelled to believe that an attack was intended not alone on this office, but upon the whole present public school system. Another member said that if the question must come on the $4,000 salary or repealing the ordinance, he should vote for repeal. In distinction from the School

Committee, the City Council assumed to know that the schools would fare better without a Superintendent than with. With two notable exceptions, the real nature of the office and the necessity of paid supervision, and the fact that after all the people intend that the School Committee shall have charge of the schools, were apparently not thought worth a discussion. It was publicly announced that the School Committee must be rebuked.

The question fared but little better in the Board of Aldermen, where a description of the duties of Superintendent (characterized as humorous in a published report) was given by one who, after a service of two years on the School Committee and one year as chairman of the Board by right of his office, had declared in an address at the organization of the City Government in 1871, that "the establishment of the office of Superintendent of Schools has proved a success;" having in the preceding year, on a similar occasion, said, "By the establishment of the office of Superintendent of Schools, much good has been accomplished. I deem the work performed by the Superintendent valuable and almost indispensable." By another member the Committee were accused of squandering the money of the City; and it was stated that "truant officers were necessary to be employed to drive children to school, who only refrained from constant attendance because the studies are so numerous, and withal so hard of comprehension." Speeches in favor of the office, by a strange mischance, are not reported.

The ordinance of repeal passed the Common Council by a vote of 14 to 2, and the Board of Aldermen 5 to 4, but, by the action of the Mayor in withholding his signature, failed to become a law.

Whatever may have been said in debate, we have a right to assume that this office was abolished because the School Committee found that the best Superintendent to be procured could only be had at a salary of $4,000, and had convinced themselves that he was worth the money. Two Superintendents of Public Schools have been recently appointed in this State: one at Springfield with a salary of $3,500; the other at Brookline, with a salary of $3,000. While we would not assert that we must pay $4,000 because a town of the size of Brookline pays $3,000,

still we are confident that these high salaries indicate that the office of Superintendent requires a combination of unusual qualities, for which we must pay a sum of money at least equal to what can be obtained in other places.

It will be seen from the above that the repeal of the ordinance was hurried through both branches of the City Council, that the Committee on Public Instruction were not asked to consider and report upon the necessity of the office, and that a motion to consult with the School Committee met with no favor.

The ignorance shown since this discussion began, as to the powers of School Committees in expenditures for salaries, and the amount of control to be exercised by City Councils, will justify the following extract from an opinion delivered in the Supreme Judicial Court in the case of the "City of Charlestown *v.* Gardner and Others," January term, 1868: —

"The power given to School Committees to contract with teachers necessarily implies and includes the power to determine their salaries; and in so doing they are not restricted to the amount appropriated for the purpose by the City Council. If the City Council could control the salary, it could thereby greatly narrow the range of choice or even indirectly prevent the possibility of obtaining any suitable instructors. The School Committee are an independent body, intrusted by law with large and important powers and duties; and although every discretionary power is liable to abuse, against which no perfect safeguards can be provided, yet we are aware of no substantial reason for supposing that the power of fixing teachers' salaries is more liable to abuse by the School Committee than by the City Council."

The most important question remains to be answered. It is this: What are the duties of the Superintendent? can they be performed in this city by the School Committee? The following from the Report of the Committee of 1865 can be repeated here with the added emphasis of eight years' experience: "Our schools are now so numerous and require so much attention, the unsettled questions pertaining to methods of education are so various and so pressing, that it would be of great advantage if

a general superintendence could be assigned to one competent man. A man of great activity would be needed for the execution of one part of such a duty, and large information and good judgment for another part. The duties of such an officer would be, in general terms, to study the Public School system, both of America and of foreign countries, and suggest improvements in our own; to obtain a personal knowledge of the condition of *all* our public schools, with a view to bringing all of them as nearly as may be to an equal standard of efficiency; to advise the teachers and the School Committee on the best methods of instruction and discipline; to contrive means for bringing under instruction that large number of children which, in a place populated to a considerable degree by foreigners, will always seek to evade it, or be deprived of it by their ignorant parents; and to consult with the proper agents of the City Government as to the building and bettering of school-houses, and the methods of best securing the health and comfort of pupils and teachers. Such an officer, supposing him to be possessed of the requisite qualifications, would undoubtedly be of very great use. School Committees, granting them to be always constituted of the best materials, are constantly changing. If a man who is busily occupied undertakes to do all that he can to be useful, he commonly finds the labor too much for him, and (supposing him not to be dropped by his fellow-citizens) soon retires. The fair performance of only the routine duties of the place demands in Cambridge the devotion of a great deal of time. This time should be and is most cheerfully given, but a great deal more time would be required of him who would thoroughly master the subjects with which he has to deal, — in fact all his time. We think, therefore, that we cannot better make up for the deficiencies of which we are conscious ourselves than by recommending to our successors to consider at once the expediency of establishing the office of Superintendent of Public Schools. While making this recommendation we must call attention to the exceeding importance of making *no mistake in the selection of the man*, if such an office should be created. From the nature of the case, the value of such a Superintendent depends much upon the time he continues in his place."

The Committee who made this Report had under their care 5,335 scholars and 108 teachers: we have now 7,379 scholars and 171 teachers. There undoubtedly was a time when the schools did well with only the supervision of the Committee; but that time must have been when the city contained less than half the present number of inhabitants, and a population of different character from the present one. Even during the years when Cambridge had a small Committee of very able men, earnest in their work, our Primary Schools had become a disgrace to the city. We all remember the excitement occasioned some eight years since, by a description of some of the school-houses of this city, written by a member of the School Committee of that day, published in an educational journal, and copied into many of the leading papers of the country.

A review of the last six years in the history of our Primary Schools will demonstrate the peculiar value of professional superintendence. Six years ago the accommodations in a majority of the buildings were wretchedly insufficient. A proper grading of the schools was impossible, from the fact that the city had but one or two buildings fitted to the purpose. The persistence of a Superintendent more than any thing else has at last secured proper school accommodations, and the improvement of the Primary Schools has followed almost as a matter of course.

The course of instruction has been very materially changed, and in many respects enlarged, and yet the age of admission to the Grammar Schools has been reduced from eleven years to below ten. The primary scholars now enter these schools better prepared than formerly. They are not overworked. The methods of teaching used are more attractive. The selection of teachers has been made with greater care and better judgment. We believe that our Primary Schools will now bear comparison with any in the State, and they are constantly improving.

Lastly, the School Committee are themselves in constant need of the influence of a man with a better knowledge of the detail work of every school in the city than a Committee-man can possibly have without the sacrifice of all other occupation; a

man familiar with the best works of other places, and with the whole range of school work so fixed in his mind that every circumstance, arrangement, or effort shall be made to take its appropriate place in the system.

ISAAC BRADFORD, *Chairman ex officio.*

School Committee.

HENRY P. WALCOTT,
ALEXANDER McKENZIE,
ANDREW P. PEABODY,
EDWARD R. COGSWELL,
HENRY HINCKLEY,
WILLIAM S. KARR,
SAMUEL W. McDANIEL,
GEORGE A. COBURN,
WILLIAM A. MUNROE,
GEORGE R. LEAVITT,
GEORGE E. McNEILL,
PHILIP R. AMMIDON,
WILLIAM S. APSEY,

TABULAR VIEW

OF

THE PUBLIC SCHOOLS OF CAMBRIDGE,

JANUARY 1, 1874.

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1874.
High School,	Lyman R. Williston	$4,000	365
	William F. Bradbury	2,500	
	John Orne, Jr	2,000	
	Theodore P. Adams	2,000	
	Solon F. Whitney	2,000	
	Mary F. Peirce	1,200	
	Emma A. Scudder	1,000	
	Elizabeth M. Fessenden . . .	1,000	
	Hannah Gleason	1,000	
	Augusta L. Brigham	1,000	
	Olive E. Fairbanks	1,000	
Allston Grammar,	Benjamin W. Roberts . . .	2,500	578
	Lizzie B. Winnett	700	
	Emma F. King	700	
	Isabel E. Billman	700	
	Lucia E. Whiting	700	
	Susan H. Ricker	700	
	Sarah J. Hinckley	700	
	Hattie E. Keith	700	
	Georgie M. Barbour	700	
	Emma E. Perkins	700	
	Emily R. Pitkin	700	
	Emma A. Hopkins	600	
	Charlotte B. Young	700	
Harvard „	Aaron B. Magoun	2,500	635
	H. Augusta Dodge	700	
	Ada H. Wellington	700	
	Mary E. Wyeth	700	
	Lydia S. King	700	
	Susan F. Athearn	700	
	Margaret B. Wellington . . .	700	
	Margaret R. Hodgkins . . .	700	
	Annie M. Leland	700	
	Susan E. Merrill	700	
	Emily F. Damon	700	
	Sarah E. Golden	700	
	Sarah E. Hearsey	700	
	Ellen Merrick	700	
	Sarah E. Dyer	700	
Putnam „	Francis Cogswell	2,500	354
	Sarah M. Burnham	700	
	Anna B. Josselyn	700	
	Maria E. Spare	700	
	Minnie E. Metcalf	700	

TABULAR VIEW OF THE PUBLIC SCHOOLS. — *Continued.*

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1874.
Putnam Grammar,	Ella R. Grieves	700	
	Addie Stone	700	
	Charlotte A. Brown	700	
	Eliza M. Hussey	700	
Shepard „	Daniel B. Wheeler	2,500	393
	John Wilson	700	
	Emma M. Taylor	700	
	Sara J. French	700	
	Mary C. Cook	700	
	H. Estelle Varney	700	
	Sarah A. Rand	700	
	Julia H. Osgood	700	
	Henrietta F. Harris	700	
	Harriet L. Hayward	700	
Thorndike „	Ruel H. Fletcher	2,500	412
	Anna W. Averill	700	
	Eunice B. Dyer	700	
	Martha A. Martin	700	
	Ella W. Clark	700	
	Ruth H. Faxon	700	
	Mary A. Willis	700	
	Mary E. Nason	700	
	Ellen N. Parker	700	
	Fanny Allen	600	
Washington „	Daniel Mansfield	2,500	496
	Lucy A. Downing	700	
	Adeline M. Ireson	700	
	Abby M. Webb	700	
	Adelaide A. Keith	700	
	Adelaide A. Keeler	700	
	Emma F. Veazie	700	
	J. Abbie Hodgkins	700	
	Dora Puffer	700	
	Adelia Dunham	700	
	Hattie T. Neally	700	
	Ada E. Doe	700	
Webster „	John D. Billings	2,500	552
	Eliza K. Brackett	700	
	Louise C. D. Harlow	700	
	Gertrude A. Hyde	700	
	Esther F. Hannum	700	
	Eliza E. Williams	700	
	Hattie E. Warfield	700	
	Nellie I. Crafts	700	
	Emma J. Hale	700	
	Lucy E. Davis	500	
	Susan B. Holmes	700	
	Charlotte M. Chase	700	
	May E. Towle	600	
Boardman Primary,	Mary F. Emerson	700	324
	Mary F. Stewart	700	
	Mary Agnes Lewis	700	
	Sarah E. Stewart	700	
	Ada W. Baker	700	
	Fanny A. Cooke	700	

TABULAR VIEW OF THE PUBLIC SCHOOLS. — *Continued.*

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1874.
Boardman Primary,	Nettie Sargent	700	
	Augusta L. Balch	700	
Bridge „	Elizabeth E. Dallinger	700	85
	Emily C. Dallinger	700	
City „	Etta S. Adams	700	38
Dana „	Abby A. Lewis	700	93
	Maria F. Williams	700	
Dunster „	Sarah B. Waitt	700	159
	Susan E. Wyeth	700	
	Mary E. Smallidge	700	
	M. Louise Akerman	500	
Felton „	Juliet F. Sumner	700	222
	Ella L. Lynes	700	
	Lizzie C. Capen	600	
	Georgiana L. Backus	500	
	Sarah Cutler	500	
Gannett „	Sarah J. A. Davis	700	228
	Lucy C. Wyeth	700	
	Annie F. Harding	700	
	Estelle J. French	700	
	Anna M. Jones	500	
Gore „	Harriet A. Butler	700	432
	Frances E. Pendexter	700	
	Carrie F. Noyes	700	
	Alice J. Winward	700	
	Martha J. Avery	700	
	Emma R. Knights	700	
	Mary E. Hartwell	700	
	Addie M. Bettinson	600	
Harvard „	Ellen A. Cheney	700	88
	Helen M. Kelley	700	
Holmes „	Marianne M. Webb	700	171
	Eunice W. Field	700	
	Mary L. Bullard	700	
	Louisa G. Matchett	500	
Mason „	M. Lizzie Evans	700	95
	Martha E. Deane	700	
Otis „	Abby S. Taylor	700	439
	Lydia A. Whitcher	700	
	Susan M. Pendexter	700	
	Martha H. Butler	700	
	Ellen N. Pike	700	
	Luvia Goodnow	700	
	Annie Knapp	700	
	Agnes Cox	700	
Putnam „	Nellie F. Ball	600	53
Quincy „	Charlotte E. Jewell	700	91
	Talulah G. Abercrombie	500	
Reed „	Lucy T. Sawyer	700	203
	Evelyn A. Sawyer	700	
	Martha C. Dickman	700	
	Elizabeth A. Tower	700	
Sargent „	Anna M. Harrod	700	170
	Frances J. Harrod	700	
	Mary A. Brown	500	

TABULAR VIEW OF THE PUBLIC SCHOOLS. — *Continued.*

Name of School.	Teachers.	Salary.	No. of Scholars, Jan. 1, 1874.
Sargent Primary,	M. Elizabeth Dickson	500	
Willard ,,	Mary Ann Tarbell	700	417
	Mary E. Sawyer	700	
	Anna S. Lamson	700	
	Susan M. Cochrane	700	
	Kate M. Lowell	700	
	Fanny E. Cooke	700	
	Amelia Wright	700	
	H. Flora Hannum	700	
Wyman ,,	Fanny E. M. Dennis	700	133
	Charlotte A. Ewell	700	
	Letitia M. Dennis	500	
Training School,	Anna C. Sullivan	1,000	153
	Ella C. Whitney	800	
	M. Etta Arkerson	800	
	Emma B. Alley	700	

TEACHER OF SINGING, — Nathan Lincoln . . $2,500
TEACHER OF PENMANSHIP, — Alvah C. Smith . 1,000

SUMMARY.

Number of Pupils in High School	365
,, ,, ,, ,, Grammar Schools	3,420
,, ,, ,, ,, Primary Schools	3,594
	7,379

COST OF INSTRUCTION.

High School	$18,700	for each pupil,	$51.23
Grammar Schools	70,400	,, ,, ,,	20.58
Primary ,,	52,500	,, ,, ,,	14.61
Music	2,000		
	$143,600		$19.46

Number of pupils belonging to Public Schools, Jan. 1, 1874	7,379
,, ,, ,, ,, ,, ,, Jan. 1, 1873	7,133
Increase during the past year	246

Increase of pupils, 1860	272
,, ,, ,, 1861	172
,, ,, ,, 1862	262
,, ,, ,, 1863	226
,, ,, ,, 1864	200
,, ,, ,, 1865	58
,, ,, ,, 1866	243
,, ,, ,, 1867	286
,, ,, ,, 1868	330
,, ,, ,, 1869	20
,, ,, ,, 1870	296
,, ,, ,, 1871	357
,, ,, ,, 1872	293
,, ,, ,, 1873	246
Number of Schools	27
,, ,, Teachers	172

REPORT

OF

THE SUPERINTENDENT OF SCHOOLS.

To the School Committee of Cambridge: —

GENTLEMEN, — As my active connection with the schools closed with the month of September, it certainly will not be expected that I shall make an extended Report to your Board at this time. Indeed, I shall attempt but little more than to arrange a few statistics gathered from the annual returns and from other sources, and then briefly to suggest one or two topics that seem to me to be of importance.

SUMMARY OF STATISTICS FOR THE SCHOOL YEAR ENDING DECEMBER 31, 1873.

I. POPULATION.

Population of the city (estimated)		50,000
Number of children in the city between five and fifteen years of age, May 1, 1873	8,483	
Number May 1, 1872	8,260	
Increase for the year	223	

II. SCHOOLS.

1 High School.
7 Grammar Schools.
19 Primary Schools.
6 Evening Schools.

Whole number of Day and Evening Schools 33

III. SCHOOL-HOUSES.

For the High School	1
For the Grammar Schools	7
For the Primary Schools	17

IV. TEACHERS.

Number of teachers in High School	11
Male teachers, 5; female teachers, 6.	
Increase for the year	0
Number of teachers in Grammar Schools	83
Male teachers, 7; female teachers, 76.	
Increase for the year	4
Number of teachers in Primary Schools	76
Increase for the year	2
Number of teachers in Evening Schools	22
Male teachers, 6; female teachers, 16.	
Whole number of teachers in Day Schools, including teachers of Music and Penmanship	172

V. PUPILS.

Whole number of pupils registered in the Day Schools during the year	9,013
Average whole number of pupils belonging to the Day Schools during the year	6,688
Ratio of the average number of pupils belonging to the Schools to the school population	.788
Average daily attendance of pupils in all the Day Schools	6,073
Average per cent. of attendance in all the Day Schools	90.8
Average whole number of pupils belonging to the High School	330
Average daily attendance in High School	315
Per cent. of attendance in High School	95.3
Average whole number of pupils belonging to Grammar Schools	3,034
Average daily attendance of pupils in Grammar Schools	2,782
Per cent. of attendance in Grammar Schools	91.7
Average whole number of pupils belonging to Primary Schools	3,314
Average daily attendance in Primary Schools	2,976
Per cent. of attendance in Primary Schools	89.8

Whole number of pupils belonging to Evening Schools	297
Average attendance in Evening Schools	197
Number of pupils admitted to Grammar Schools, July, 1873	781
Number of pupils graduated from Grammar Schools	156
Number of pupils admitted to High School	149
Number of pupils graduated from High School	35
Whole number of Private Schools	16
Number of pupils in Private Schools	605

VI. FINANCES.

Assessed value of real and personal estate, May, 1873	$62,421,215.00
Cost of instruction in the Public Schools	142,700.40
Care and repairs of school-houses	45,750.38
Amount expended for new school-houses and alterations	28,337.50
For Evening Schools	2,053.08
Incidental expenses for school purposes	309.78
Total expenditures for all school purposes	219,151.14
Deducting the receipts for the School Fund, $1,682.35, and the receipts from the Hopkins Fund, $931.69, actual expenses for school purposes	216,537.10
Ratio of expenses for school purposes to the valuation of 1873	.00346

The year now closing will compare favorably with preceding ones as regards the work of the public schools. While perfection may not have been attained in any direction, and probably has not been, still it is true that good, honest work has been done, and that the schools are worthy of the hearty support and confidence of the people.

The changes which have occurred during the year are well known to each member of your Board, and hence it would be superfluous to recall them here. And yet I shall allude to one or two matters for the sake of suggesting certain principles which, as it seems to me, should guide the Committee in their management of the schools hereafter.

In the first place, then, it is well to remember that the most important work which the Committee have been called upon to perform has been the selection of teachers. If the schools are

better to-day than they were one year ago, it is mainly due to the fact that well-qualified teachers have been chosen to fill the vacancies as they have occurred. If the schools, on the other hand, are inferior now to what they were at the beginning of the year, this also may be traced as a direct cause to the teachers who have been appointed. The readiest means of improving the schools is found in selecting good teachers; and no surer way of injuring them has been discovered than by placing the children in the hands of those who lack the important qualifications of a wise and judicious instructor. My own opinion is that the appointments which have been made have, in nearly every case, proved satisfactory, and that much real strength has been added to the corps of instructors. Nor has this been, in any sense, a slight matter. There have been thirty teachers appointed to various permanent positions in the city. Of these twenty have been employed in the Grammar Schools, and ten in the Primary Department. The principle upon which the Committee have acted seems to me to be this: to select residents of Cambridge, graduates of our own schools, whenever they felt that these possessed the necessary qualifications, that is, to give them a preference over others of equal ability. Hence it is that for all the positions in the Primary Schools, those educated in our Training School, or others who were residents of Cambridge, but not graduates of the Training School, have been taken; and, in addition to these, some appointments have been made in the Grammar Schools from the same number. But the balance of the appointments has been of teachers from elsewhere, and, in general, of those who were supposed to have had successful experience. Representatives of the different State Normal Schools have been chosen; and these have well illustrated the advantage of thorough training for the work of teaching. And now how shall vacancies as they occur from time to time be filled? I answer, as they have been during the past few years. Our Training School is doing a splendid work in qualifying the graduates of the High School for positions in the schools; and those who avail themselves of its privileges, *and show that they have the ability to teach*, will, in the future as in the past, be sure of work to do. But it would be a great mis-

take to suppose that the wants of the schools can be met in this way. The last class at the Training School graduated twelve members, and this may safely be assumed to be an average class. There will not be more than about this number each year who will leave the High School with the intention of teaching. Now, for three years we have averaged not less than thirty appointments each year; and there is no reason to suppose that the number will be less hereafter. We shall then be obliged to seek teachers from other cities and towns; and I can only express the hope that those having the schools in charge will not undervalue the importance of selecting only those who are qualified for the important work of moulding the minds and characters of the children of this city. Neither residence, personal needs, nor influential friends will supply the lack of actual fitness; although it is not always easy to convince either applicants or their friends of the truth of this statement. My own position in the matter of appointments has been to regard our own graduates as preferred candidates, and, first of all, to urge their claims faithfully so far as I could satisfy myself that they were worthy of the positions which they sought, and no farther. That I have often erred in my estimate of the merits of those whose claims were considered, I am not so foolish as to deny.

I cannot forbear expressing my satisfaction in being able to say that most important improvements have been made in the school accommodations during the year. Three large schoolhouses, the Shepard, the Allston, and the Webster, have been thoroughly remodelled; and now, instead of being a disgrace to the City, they are well adapted to the wants of the schools. By these changes considerable additional room has been gained. Especially is this true in the case of the Shepard, the building having been so enlarged that it will meet the needs of the district for several years. The City is to be congratulated upon the fact that the various city governments for the last few years have appreciated the importance of giving to the schools comfortable and convenient quarters.

The day of ill-lighted and damp halls and vestries, or of school-rooms but little better, into which from one hundred to two hundred pupils could be crowded, has probably passed

away; and we have now accepted the sound policy of having plain, substantial school-houses, which shall be well lighted, well heated, and adapted to the purposes for which they are intended. For what has been done, not only during the past year, but in former years, the thanks of every friend of the schools are due to those members of the City Council who have especially interested themselves in the good work.

You will doubtless at an early day call the attention of the proper authorities to certain wants now existing.

The annual increase of pupils is from two hundred and fifty to three hundred and fifty, — an increase that will necessitate the erection on an average of one school-house each year. At present, additional accommodations in the Primary department are needed in Ward One, in the vicinity of North Avenue. But as this is a matter which has been discussed more than once in former Reports, and as it commended itself to the favorable notice of the last City Council, it need not be dwelt upon at this time.

There is another section of the city where the need of enlarged accommodations is not less imperative. I refer to that portion of Ward Two lying north of Hampshire Street and extending towards East Cambridge. The Allston and Harvard Schools report an aggregate of twelve hundred and thirteen pupils as belonging to them on the first of January. In addition to these a large number of children are obliged to cross the railroad to reach the Grammar School in Ward Three, to which they are now compelled to go. Besides, the Primary Schools in the vicinity have all been crowded, and to such an extent that early in the year one class of children was placed in a hall on Cambridge Street, where it still remains. I can come to no conclusion except that we need a school-house in the vicinity of Cambridge Street, and I believe the need to be very pressing.

I trust it will not be forgotten that we still have two school-houses which ought to be improved, viz., the Sargent and the Felton; the latter of which is a large brick structure known as the "Old High School-house." Each of these has large and ill-arranged rooms, and each could be made convenient and com-

fortable. The remodelling of the Sargent was ordered by the last City Council; but, as the appropriation was not sufficient to cover the expense of the change, the work was deferred.

An attempt was made at the beginning of the year to introduce some system by which the care of the school-houses might be more satisfactory. To this end certain rules for the government of the janitors were drawn up and submitted to them before they entered upon their engagement with the City. On the whole, there is much less of which to complain in this direction than heretofore, with a corresponding gain to the comfort and success of the schools.

In this connection it is pleasant to be able to record the fact that after much discussion of the subject, it remained for the City Council of 1873 to provide each of the Grammar Schools with a first-class piano-forte.

When the last Report was submitted, it was earnestly hoped that some change would be made at an early day by which children sentenced for truancy would have suitable quarters. It is needless to say that nothing has been done, and that the matter stands precisely as it did one year ago. I have no desire to recommend impracticable schemes; but knowing as I do that all who have given attention to the subject agree that the Almshouse, as at present arranged, is not a suitable place for these children, I must again urge upon your Board the importance of calling the attention of the City Council to the subject.

It is not for me to say whether the Almshouse can or cannot be rearranged; but I cannot doubt that some plan can be devised by which children guilty only of truancy shall be spared the contaminating influences of association with those who have become adepts in crime. The fact, also, that under present arrangements truants can readily escape from the Almshouse is important, but has been fully discussed on former occasions, and hence can be omitted now. I should not allude to this subject at this time, did I not feel sure that many of the past and present members of the Board of Overseers, as well as others, fully concur with me in thinking that the present evils are great, and that they can be corrected.

There is a subject connected with this which I deem worthy

of the attention of the next Board. There are in the different sections of the city a certain number of children of school age who are not truants, and are not guilty of offences for which they should be sent to any penal institution; and yet, because of their defiance of authority and for other causes, they are frequently suspended from school. Is it not an important question how far the interests of the mass of pupils should be allowed to suffer through the fault of the few who accomplish almost nothing for themselves, but whose influence is wholly bad upon the school of which they are nominal members? The question I propose is this: Is it expedient to organize one or more ungraded schools in which this class of children shall be taught, and which they shall be required to attend, instead of allowing them to divide their time, as now, between the school and the street, with positive harm, both to themselves and to the school which is unfortunate enough to claim them as members? It may be found that there would be practical difficulties in carrying out a plan of this kind, but I believe the subject at least worthy of consideration.

At the last session of the Legislature an Act was passed authorizing cities and towns to furnish pupils in the public schools with text-books. I am by no means sure that it would be wise for us to take advantage of this Act to the full extent of furnishing all the pupils with books at the expense of the City, although in some cities, where the plan has been tried, there is apparently much enthusiasm in regard to it. But, however this may be, I have long thought there would be positive advantages in furnishing pupils at the public expense with whatever stationery they need for their school work. I am satisfied that the present plan of furnishing paper, pens, &c., is annoying both to parents and teachers, and unsatisfactory to all concerned.

I have no definite plan to propose for carrying out this suggestion, but trust that it may receive the attention of the Board.

As was mentioned in the last Report, the plan has been adopted of conferring diplomas upon those pupils who complete the prescribed course of study in the Grammar Schools. Of

course it is too early to judge of the effect of this upon this grade of our schools, and yet the result cannot be doubtful. It will be the means of inducing a certain percentage of scholars to finish the course who would otherwise fail to do so; and that this is a desirable result cannot be questioned. The present first classes are unusually large, and thus far but few members have withdrawn from them since the beginning of the year. This is as it should be.

There are certain facts connected with the statistics for the last few years that are suggestive, and especially so as showing the relative position held by the different grades, and the growth of each. In 1868, the number of pupils belonging to the schools was 5,864; the number now is 7,379. This is an increase of a fraction less than twenty-six per cent. The increase in the High School is precisely the same as that of all the schools, or a trifle less than twenty-six per cent. The number in the Primary Schools in 1868 was 3,025; now it is 3,594, or an increase of but *eighteen* per cent. The number in the Grammar department in 1868 was 2,549; now it is 3,420, or an increase of a fraction less than *thirty-four* per cent.

The greater increase in the Grammar Schools is partly accounted for by the fact that, owing to a change in the course of study in the Primary Schools, less time is consumed in that grade than formerly, so that pupils enter the Grammar Schools younger than before; and, as might naturally be expected, being younger when they enter, they are less likely to drop out early in the course. The tendency which is thus indicated seems to me to be in the right direction; for we ought to use all reasonable means to induce pupils at least to complete the work of the Grammar Schools.

In closing this my last Report to your Board, I cannot forbear expressing my appreciation of the kindness and consideration which I have at all times received at your hands. It is worthy of remembrance and of record, that during a period of nearly six years no single incident has occurred tending in the slightest degree to mar the harmony which has at all times existed.

And now I withdraw from the work which I have so imperfectly begun; but in so doing I shall not cease to cherish a deep

interest in the public schools of this city. I have confidence in the schools, and in our general system of public school education; and if hereafter the one or the other shall be assailed either openly or covertly, from any quarter, I cannot doubt that such attacks will meet at the hands of this community with a merited condemnation.

Respectfully submitted.

E. B. HALE.

ORDINANCES

PASSED SINCE THE

REVISION OF THE CITY ORDINANCES IN 1871.

AN ORDINANCE IN ADDITION TO THE ORDINANCE RELATING TO ACCOUNTS AND FINANCE.

SEC. 1. There shall be a Board of Commissioners on the Sinking Funds of the City, which shall have control of all funds created for the payment or redemption of the City Debt, except those pertaining to the Water Loan.

SEC. 2. Said Board shall consist of the Mayor, who shall be Chairman, the City Treasurer, the first member of the Committee on Finance on the part of the Board of Aldermen, the Chairman of said Committee on the part of the Common Council, *ex officiis*, and three persons chosen by joint vote of the City Council from the citizens at large, one to hold office one year, one two years, and one three years from the first Wednesday of May, 1872; and annually thereafter, in April, one member of said Board shall be so chosen from the citizens at large, to hold office for three years from the first Wednesday of May following his election. The Auditor of Accounts shall be Secretary of the Board.

SEC. 3. All loans for public buildings and lands therefor, for constructing and improving bridges, and for taking, raising, and improving low lands, shall be negotiated for ten years.

All loans for laying out and paving streets, and purchasing public lands, shall be negotiated for twenty years.

All loans for widening streets, and constructing sewers and drains, shall be negotiated for thirty years.

Bonds issued for such loans shall bear upon the face the purpose for which they were issued, and be dated the first day of either January, April, July, or October of the year they are issued.

SEC. 4. For sinking funds to redeem at maturity such several loans, there shall be annually appropriated and raised by taxation, on account of loans made for ten years, a sum equal to six per cent. thereof; on account of loans made for twenty years, a sum equal to three per cent. thereof; and on account of loans made for thirty years, a sum equal to one and one-half per cent. thereof; and for a sinking fund to redeem the present funded debt of the City, excluding the water loan, there shall be annually appropriated, and raised by taxation, the sum of ten thousand dollars; and all sums received for entering, and as assessments for sewers and drains, from the sale of real estate belonging to the City, from assessments for benefit or advantage by reason of laying out, widening, discontinuing, changing of grade, or other altering of streets or bridges, and from any bond or note, except the water loan, belonging to the City, with said amounts to be raised by taxation, shall annually, on the thirtieth day of November, be paid by the City Treasurer to said Board.

SEC. 5. The Board shall, at the close of each financial year, certify to the Auditor of Accounts the amounts hereunder required to be raised by taxation for the several funds, which amounts shall be put into the yearly appropriation the next succeeding year, and shall invest all sums paid to it under section four, with their accumulations, in the permanent or temporary loans of the city, or the bonds of the State of Massachusetts, the United States, or of any city or town in the State of Massachusetts, and in no other securities, which investments shall bear interest at a rate of at least six per cent. per annum. The bonds of the City thus acquired shall remain as a part of the assets of the several specific funds with which they were purchased; but, if it appears to the Board that any sinking fund will be more than sufficient to redeem at maturity the loan for which it was created, the Board may in its discretion discontinue further taxation on account thereof, for such time as it may deem expedient. In purchasing bonds of the City, those

issued for the shortest time shall, as far as practicable, be purchased.

SEC. 6. Bonds with their coupons purchased under the preceding section shall be negotiable only upon the order of the Board, which may so negotiate them; and bonds of the City of Cambridge, so purchased, shall have written or stamped upon the face thereof the words, "Negotiable only upon the order of the Board of Commissioners on the Sinking Funds of the City of Cambridge."

SEC. 7. When a debt to be paid from a sinking fund becomes due, the Board shall furnish the City Treasurer, from the funds in its care for such payment, the sum required, or so much as is to the credit of such debt, taking his receipt therefor; and, if such funds are in excess of the debt, the residue shall be used in purchasing the debt of the City, except the water loan, created prior to 1872.

SEC. 8. The Board shall invest a portion of the several sinking funds in each debt, except the water loan, when created by the City, and shall sell the same at par to the City Treasurer, whenever required; and loans to the City, from the sinking funds, shall be made upon securities payable only to the Board.

SEC. 9. The Board shall semi-annually, on or before the fourth Monday of January and July, report to the City Council the exact condition of the several funds under its control, to the first day of each of said months.

SEC. 10. The City Treasurer shall keep the accounts of the several sinking funds in a book for the purpose, and in such manner and form as the Board directs. He shall annually, on the first day of January, furnish to the Auditor of Accounts a statement of the condition of the several funds on the thirtieth day of November preceding, which statement shall be printed in the annual report of the Finance Committee.

SEC. 11. The Board shall keep a full record of its doings in a book for the purpose, which record shall be at all times open to the inspection of each Board of the City Council.

[*Adopted March* 20, 1872.]

AN ORDINANCE RELATING TO THE WATER LOAN.

The Trustees of the Cambridge Water Loan shall, so far as practicable, invest all funds in their charge in the bonds of said loan. Such bonds, so purchased, shall be negotiable only upon the order of said Trustees, who may so negotiate them; and such bonds and their coupons shall have written or stamped upon the face thereof the words, "Negotiable only upon the order of the Trustees of the Cambridge Water Loan."

[*Adopted April* 3, 1872; *repealed April* 17, 1873.]

AN ORDINANCE IN RELATION TO POLICE.

So much of section six of chapter eighteen of the Revised Ordinances as provides for clerical assistance for the Chief of Police, and expense of the same, is hereby repealed.

[*Adopted April* 17, 1872.]

AN ORDINANCE RELATING TO THE COMPENSATION OF THE DRIVER AND MEMBERS OF THE HOOK AND LADDER COMPANY, AND THE FORFEITURE OF COMPENSATION OF THE MEMBERS OF THE FIRE DEPARTMENT.

SEC. 1. Section forty-one of chapter ten of the Revised Ordinances is so amended that, from and after the first day of March, 1872, the driver of the hook and ladder company shall be paid seventy-five dollars per month, and the members of said company shall be paid one hundred dollars per year, payable monthly.

SEC. 2. Section fifteen of said chapter is amended by repealing all of said section after the words, "one year," in the fourth line.

[*Adopted May* 22, 1872.]

AN ORDINANCE IN RELATION TO MONEYS RECEIVED FOR CARE OF LOTS IN CAMBRIDGE CEMETERY.

SEC. 1. The City will receive of any person any sum of money, not less than one hundred dollars, the interest thereof, at the rate of six per centum per annum, to be applied to the annual care of such lot in the Cambridge Cemetery as the person paying said money shall designate.

SEC. 2. The City Treasurer shall receive all sums of money paid in accordance with the provisions of the preceding section, giving a proper receipt of the City therefor; and shall annually, at such time as the Board of Commissioners of the Cambridge Cemetery shall request, pay over to said Board six per cent. interest upon all sums so paid to, and receipted for by him, with a statement of the several lots in the Cemetery upon which the interest so paid is to be expended.

SEC. 3. Said Board shall receipt for, and faithfully apply, all sums of interest so received by it, in accordance with the statement so made by the City Treasurer.

SEC. 4. The fund so created shall be denominated the "Cemetery Fund for the perpetual Care of Lots."

SEC. 5. The foregoing ordinance shall apply to all sums heretofore deposited for this purpose.

[*Adopted Oct.* 16, 1872.]

AN ORDINANCE IN RELATION TO THE COMPENSATION OF MEMBERS OF THE FIRE DEPARTMENT.

The compensation of engineers of the steamer companies shall be one hundred dollars per month; and the compensation of drivers of steamer companies and driver of the hook and ladder company shall be eighty-five dollars per month; said rates of compensation to date from Aug. 1, 1872.

[*Adopted Nov.* 20, 1872.]

AN ORDINANCE IN RELATION TO THE BOUNDARIES OF THE SEVERAL WARDS, AND THE NUMBER OF MEMBERS OF THE COMMON COUNCIL TO BE ELECTED BY EACH WARD.

SEC. 1. The boundaries of the several wards shall, until the month of October, in the year eighteen hundred and seventy-seven, continue the same as now established.

SEC. 2. The members of the Common Council shall be apportioned to the several wards as follows: Ward One shall elect four; Ward Two shall elect five; Ward Three shall elect five; Ward Four shall elect four; Ward Five shall elect two.

[*Adopted Nov.* 27, 1872.]

AN ORDINANCE CONCERNING BONDS OF THE WATER LOAN.

The "Ordinance relating to the Water Loan" passed to be ordained April 3, 1872, is hereby repealed.

[*Adopted April* 17, 1873.]

AN ORDINANCE RELATING TO THE COMPENSATION OF MEMBERS OF THE FIRE DEPARTMENT.

From and after February 1, 1873, the compensation of members of the Fire Department, other than the "permanent men," shall be as follows, viz.: —

STEAMER COMPANIES.

Foreman	$220 per year.
Assistant Foreman	210 „ „
Hosemen and Firemen	200 „ „

HOOK AND LADDER COMPANY.

Foreman	$220 per year.
Assistant Foreman	210 „ „
Members	200 „ „

[*Adopted April* 17, 1873.]

AN ORDINANCE RELATING TO LICENSES.

All licenses for keeping billiard tables and bowling alleys, and for collecting junk, unless sooner revoked, shall expire on the first day of April. Provided, however, that any such license granted during the present year, after the first day of April, shall, unless sooner revoked, expire on the first day of April, 1874.

[*Adopted April* 23, 1873.]

AN ORDINANCE IN RELATION TO THE SALARIES OF THE CITY CLERK AND AUDITOR OF ACCOUNTS.

SEC. 1. Chapters four and nineteen of the Revised Ordinances are hereby amended as follows: —

The allowance to the City Clerk for clerical assistance shall be fifteen hundred dollars, and the salary of the Auditor of Accounts shall be one thousand dollars.

SEC. 2. This ordinance shall take effect as of the first day of January last.

[*Adopted May* 7, 1873.]

AN ORDINANCE CREATING THE OFFICE OF SUPERINTENDENT OF PUBLIC BUILDINGS.

SEC. 1. On the first Wednesday of April, annually, or within thirty days thereafter, there shall be elected, by concurrent vote, a Superintendent of Public Buildings. He shall hold his office for one year from the first Monday of April in the year in which he shall be elected, and until his successor is elected and qualified, unless sooner removed; he shall be removable at the pleasure of the City Council, and vacancies may be filled at any time for the unexpired term.

SEC. 2. It shall be the duty of the said Superintendent, under the direction of the Committee on Public Property, to superintend the construction of all buildings erected by the City, unless exempted from such service by said Committee.

SEC. 3. He shall, under the direction of said Committee, have the care and custody of all the school-houses and other buildings belonging to the City; shall keep himself acquainted with their condition; shall employ suitable mechanics to make such alterations or repairs as may be ordered on the same; shall superintend such alterations or repairs; and, in general, shall render such services in relation to such buildings as may be required of him by said Committee.

SEC. 4. He shall keep an accurate record of all buildings belonging to the City, and lands appurtenant to such buildings, and all other lands belonging to the City; and in the month of December, in each year, he shall present to the City Council a report in relation to the same, showing their condition and the nature and amount of expenditures that shall have been made upon them.

SEC. 5. He shall have supervision over all matters provided for in the "Ordinance in Relation to the Construction of Buildings," and shall have authority to prescribe the character and thickness of walls, and the character of the fire escapes or modes of egress referred to in said ordinance.

SEC. 6. He shall attend to the delivery and reception of all fuel for the use of public buildings, and give certificates therefor as the same is delivered, to the end that the proper quantity and quality may be ascertained to have been received by the Committee on Fuel, under whose direction this service shall be performed.

SEC. 7. A Superintendent of Public Buildings shall forthwith be elected, to hold office until his successor shall be duly elected and qualified, as provided in the first section of this ordinance.

SEC. 8. In full compensation for all the services of said Superintendent, he shall receive such salary as the City Council may from time to time fix and determine.

[*Adopted June* 18, 1873.]

AN ORDINANCE IN RELATION TO BOW-WINDOWS AND OTHER PROJECTIONS FROM BUILDINGS.

No person shall construct or place, or cause to be constructed or placed, any portico, balcony, balustrade, porch, door, window, or step, which shall project into any street, under a penalty of not less than five nor more than twenty dollars for each offence, and a like penalty for every day that the said portico, balcony, balustrade, porch, door, window, or step shall be continued as aforesaid, after notice to remove the same from the Board of Mayor and Aldermen, or some person by them authorized.

[*Adopted July* 2, 1873.]

AN ORDINANCE IN RELATION TO THE COMPENSATION OF THE ENGINEERS OF THE FIRE DEPARTMENT.

Chapter nineteen of the Revised Ordinances is hereby amended as follows, viz.: —

The salary of the Chief Engineer of the Fire Department shall be twelve hundred dollars per annum, to date from January 1, 1873, and the salary of the assistant engineers shall be four hundred dollars per annum, to date from April 1, 1873.

[*Adopted July* 9, 1873.]

AN ORDINANCE IN RELATION TO THE WATER WORKS.

Sec. 1. Chapter twenty-nine of the Revised Ordinances is hereby amended by striking out the twenty-first section thereof, and inserting the following in its place: —

Section 21. The Water Board shall have the power to decide what shall be considered a waste or improper use of water, and to restrict the use thereof when it may deem it necessary; and if the water-taker shall refuse or neglect to comply with any order of the Board, after notice given to him, the water may be cut off, and shall not again be let on, except by a vote of the Board, and the payment of such fine, not exceeding ten dollars, as said Board may impose.

SEC. 2. The twenty-third section of said chapter is hereby amended by striking out the words, "for all purposes not enumerated in the foregoing rates, three cents for each one hundred gallons shall be charged, the quantity to be ascertained by meter," and inserting the following words: "Manufacturers or other parties supplied with water through meters, or by estimated quantity, shall be charged at the rate of three cents per one hundred gallons," and by adding the following clause at the end of the paragraph: "When water is required for purposes which are not specified in the foregoing tariff, the rate shall be fixed by the Water Board."

SEC. 3. This ordinance shall take effect as of the first day of July, in the year eighteen hundred and seventy-three.

[*Adopted July* 9, 1873.]

AN ORDINANCE IN RELATION TO THE GOING AT LARGE OF DOMESTIC FOWLS AND GOATS.

Section twenty-three of chapter twenty-five of the Revised Ordinances is amended by the insertion, after the word "any" in the first line, of the words "domestic fowls, goats."

[*Adopted July* 23, 1873.]

AN ORDINANCE AMENDING THE "ORDINANCE PROVIDING FOR THE APPOINTMENT OF A CITY SOLICITOR AND PRESCRIBING HIS DUTIES," &c.

The "Ordinance providing for the Appointment of a City Solicitor and prescribing his Duties" is hereby amended by the addition to section three thereof of the following words: "And all opinions so furnished by him, and having reference to matters of general public interest, shall be printed annually with the documents usually so printed under the direction of the City Clerk, by order of the City Council."

[*Adopted Sept.* 24, 1873.]

AN ORDINANCE RELATING TO THE SALARY AND DUTIES OF THE BOARD OF ASSESSORS.

SEC. 1. It shall be the duty of the Board of Assessors (in addition to their other duties) by an examination of the returns and records in the office of the Tax Commissioner of the Commonwealth, and by all other proper methods, to see that the City obtains its just and proportionate share of the taxes assessed upon stockholders in national banks and other corporations.

SEC. 2. The Board of Assessors shall receive an annual salary of six thousand dollars, to be paid in equal quarterly payments as heretofore, which shall be in full for all services rendered in their official capacity, including those prescribed in this ordinance, and clerk hire.

SEC. 3. This ordinance shall take effect as of the first Wednesday in January, eighteen hundred and seventy-three.

[*Adopted Oct.* 8, 1873.]

AN ORDINANCE IN RELATION TO SEWERS.

Chapter twenty-three of the Revised Ordinances is amended as follows: —

By striking out all of section one, and inserting in place thereof the following: —

The City Council shall determine upon the necessity of all main drains and common sewers, in the same manner that public streets are laid out; and such drains and sewers so laid out through streets, shall be laid as nearly as possible in the centre of the streets or highways in which they are constructed. They shall be built of such material, size, depth, and grade as shall be ordered, under the supervision of the City Engineer.

By striking out the last line of section three, being the words "and for one year thereafter."

By striking out of section seven all between the word "drains," in the third line, and the word "shall," in the ninth line, and inserting in place thereof the following: —

Shall assess not exceeding fifty cents per running foot on each side of all sewers and drains so constructed, upon all per-

sons and corporations owning land abutting on streets where such sewers or drains are laid, or owning land through which the same are laid: provided, however, that corner lots, having been assessed for a sewer on one street, shall be exempt from an assessment for a sewer on the other, to the extent of seventy-five feet from the corner. And no person whose estate has not been assessed or is not liable to an assessment for the construction of a sewer shall enter or in any manner connect his private drain or sewer with any sewer of the city, except on such terms and conditions as the City Council may establish.

By striking out the words "Mayor and Aldermen" wherever they occur, and inserting in place thereof the words "City Council."

[*Adopted Sept.* 10, 1873.]

[The Ordinance in relation to Sewers, with the foregoing amendments incorporated, reads as follows: —

SEC. 1. The City Council shall determine upon the necessity of all main drains and common sewers, in the same manner that public streets are laid out; and such drains and sewers so laid out through streets, shall be laid as nearly as possible in the centre of the streets or highways in which they are constructed. They shall be built of such material, size, depth, and grade as shall be ordered, under the supervision of the City Engineer.

SEC. 2. Whoever enters a drain into any main drain or sewer, without a permit in writing from the City Engineer, shall be liable to a fine of twenty dollars; and such permit shall state the time, place, manner, and construction of such entering, and that it shall be made under the superintendence of the City Engineer.

SEC. 3. Before granting such permit, the City Engineer shall require and receive from the owner of the estate for the benefit of which the entrance is to be made, his personal bond, binding him and his legal representatives to comply with all the terms of the permit, to keep the entering drain in good repair, and to indemnify and save the City in every way harmless from all loss, cost, damage, and expense, caused, arising, or in any direct, indirect, or contingent way, happening by, from, or on account of either such entering, or such entering drain, during the construction thereof.

SEC. 4. The City Engineer shall, under the direction of the Joint Standing Committee on Sewers and Drains, take the general superintendence of all main drains and common sewers, built, or permitted to be built or owned by the City, and take charge of the building, repairs, and keeping in order of the same, and make all contracts for the supply of labor and materials therefor.

SEC. 5. He shall make and file in his office accurate plans of all sewers and main drains, showing all entrances thereto when made. He shall have constant care of, and keep clean, and in every way in proper order, condition, and

repair, all cesspools and main drains; and for all labor and teams required by him in his duties, he shall call on the Superintendent of Streets, who shall forthwith furnish the same, and charge the expense thereof to the appropriation for sewers and drains.

SEC. 6. He shall keep and submit to the City Council an accurate account of the expenses of constructing each main or lateral drain, together with a plan in detail thereof, made up to conform to the principle upon which estates are to be assessed for it, showing all estates abutting thereon, or deriving benefit therefrom, with their areas and owners' names. He shall keep and whenever requested report to the City Council an accurate account of the cost of repairing, and all other expenses upon each common sewer or main drain; and he shall annually, in December, submit a report of all work performed, and the amount of all expenditures from the appropriation for sewers and drains.

SEC. 7. The City Council, in making assessments for defraying the expense of constructing or repairing common sewers or main drains, shall assess not exceeding fifty cents per running foot on each side of all sewers and drains so constructed, upon all persons and corporations owning land abutting on streets where such sewers or drains are laid, or owning land through which the same are laid, shall fix the time when such assessments shall be paid, and deliver the same to the City Treasurer for collection. Provided, however, that corner lots, having been assessed for a sewer on one street, shall be exempt from an assessment for a sewer on the other, to the extent of seventy-five feet from the corner; and no person whose estate has not been assessed or is not liable to an assessment for the construction of a sewer shall enter or in any manner connect his private drain or sewer with any sewer of the City, except on such terms and conditions as the City Council may establish.]

AN ORDINANCE PROVIDING FOR THE ANNUAL PUBLICATION OF CITY ORDINANCES.

All ordinances hereafter adopted by the City Council shall be published in the City Document of the year next subsequent to the date of their adoption.

All ordinances adopted since the revision of the City Ordinances in 1871, shall be published in the City Document of 1874.

[*Adopted Nov.* 19, 1873.]

AN ORDINANCE AMENDING THE "ORDINANCE RELATING TO STREETS."

Chapter twenty-five of the Revised Ordinances is hereby amended by the addition of the following words to the sixteenth section thereof: —

Whenever any street shall be opened by the Water Board, the Sewer Department, the Cambridge Gas Light Company, or by any person for any lawful purpose, the Superintendent of Streets shall prevent any unnecessary obstruction while the work is in progress, and shall see that the same is repaired and put in good order when the work is completed.

If the street shall not be repaired to his acceptance, he shall forthwith put the same in good order, and shall render a bill for the expense of such repair to the department, corporation, or person whose duty it was to repair said street.

[*Adopted Dec.* 24, 1873.]

GOVERNMENT

OF

THE CITY OF CAMBRIDGE,

1874.

MAYOR.

HON. ISAAC BRADFORD.

ALDERMEN.

HORACE O. BRIGHT,	THEODORE C. HURD,
AUGUSTUS P. CLARKE,	FRANCIS IVERS,
JAMES H. COLLINS,	JOHN McSORLEY,
JAMES C. DAVIS,	FRANCIS H. WHITMAN,
LEANDER M. HANNUM,	WILLIAM L. WHITNEY.

ALDERMEN, BY WARDS.

Ward I. Aldermen WHITMAN and WHITNEY.
Ward II. Aldermen BRIGHT and DAVIS.
Ward III. Aldermen HURD and MCSORLEY.
Ward IV. Aldermen CLARKE and HANNUM.
Ward V. Aldermen COLLINS and IVERS.

CLERK.

JUSTIN A. JACOBS.

COMMON COUNCIL.

GEORGE F. PIPER, *President.*

Ward I.

FRANK CORCORAN, JOHN T. G. NICHOLS,
CHARLES C. READ, FRANK D. WHEELER.

Ward II.

JOHN J. FATAL, JAMES MELLEN, Jr.,
THOMAS A. GRAHAM, SAMUEL L. MONTAGUE,
EDWARD H. NORTON.

Ward III.

JOHN CLARY, GEORGE H. HOWARD,
ALEXANDER FRASER, JOSEPH J. KELLEY,
CHARLES QUINN.

Ward IV.

THOMAS H. EMERSON, EDMUND REARDON,
CHARLES LAURIE, SULVILYER H. SANBORN.

Ward V.

JOHN J. HENDERSON, GEORGE F. PIPER.

CLERK.

J. WARREN COTTON.

PAGE.

J. J. KELLY.

CITY CLERK.

JUSTIN A. JACOBS.

CITY MESSENGER.

ROLAND LITCHFIELD, JR.

COMMITTEES OF THE CITY COUNCIL.

JOINT STANDING COMMITTEES.

ON FINANCE.

The MAYOR.

Aldermen.
Francis H. Whitman,
William L. Whitney.

Common Council.
The President,
Samuel L. Montague,
Edmund Reardon,
John J. Henderson,
Joseph J. Kelley,
James Mellen, Jr.

ON PUBLIC INSTRUCTION.

Aldermen.
James H. Collins,
Horace O. Bright.

Common Council.
The President,
John T. G. Nichols,
Charles C. Read,
Joseph J. Kelley.

ON ORDINANCES.

Aldermen.
Theodore C. Hurd,
Leander M. Hannum.

Common Council.
Charles C. Read,
Frank Corcoran,
Thomas H. Emerson.

ON ACCOUNTS.

Aldermen.
Francis Ivers,
Theodore C. Hurd.

Common Council.
John Clary,
Thomas H. Emerson,
Edward H. Norton.

ON PUBLIC PROPERTY.

Aldermen.
James H. Collins,
Leander M. Hannum.

Common Council.
John Clary,
Samuel L. Montague,
Frank D. Wheeler.

ON THE ALMSHOUSE.

Aldermen.	Common Council.
Horace O. Bright,	Alexander Fraser,
Francis Ivers.	John T. G. Nichols,
	John Clary.

ON ROADS AND BRIDGES.

Aldermen.	Common Council.
John McSorley,	Edward H. Norton,
James C. Davis.	Edmund Reardon,
	Frank Corcoran.

ON SEWERS AND DRAINS.

Aldermen.	Common Council.
William L. Whitney,	George H. Howard,
Horace O. Bright.	Thomas A. Graham,
	John T. G. Nichols.

ON FUEL.

Aldermen.	Common Council.
Francis Ivers,	James Mellen, Jr.,
Augustus P. Clarke.	John J. Fatal,
	Alexander Fraser.

ON LAMPS.

Aldermen.	Common Council.
Leander M. Hannum,	Thomas A. Graham,
Francis Ivers.	Charles Quinn,
	Charles Laurie.

ON WATERING STREETS.

Aldermen.	Common Council.
James C. Davis,	Sulvilyer H. Sanborn,
John McSorley.	Edward H. Norton,
	John J. Henderson.

ON PRINTING.

Alderman.	Common Council.
James H. Collins.	Frank Corcoran,
	Sulvilyer H. Sanborn.

ON THE FIRE DEPARTMENT.

Aldermen.	Common Council.
Francis H. Whitman,	Frank D. Wheeler,
Horace O. Bright.	George H. Howard,
	John J. Fatal.

ON CITY ENGINEERING.

Aldermen.	Common Council.
Leander M. Hannum,	Joseph J. Kelley,
John McSorley.	Charles Laurie,
	John J. Henderson.

ON ASSESSORS' DEPARTMENT.

Alderman.	Common Council.
Augustus P. Clarke.	Charles Quinn,
	Sulvilyer H. Sanborn.

JOINT SPECIAL COMMITTEE.

ON SOLDIERS AND THEIR FAMILIES.

Aldermen.	Common Council.
Francis Ivers,	Charles Laurie,
John McSorley.	George H. Howard,
	John J. Henderson,
	James Mellen, Jr.,
	John T. G. Nichols.

Standing Committees of the Board of Mayor and Aldermen.

ON POLICE.

The Mayor,	Augustus P. Clarke,
William L. Whitney,	Theodore C. Hurd.

ON THE FIRE DEPARTMENT.

Francis H. Whitman, Horace O. Bright,
Theodore C. Hurd.

ON ROADS AND BRIDGES.

John McSorley, James C. Davis,
William L. Whitney.

ON SEWERS AND DRAINS.

William L. Whitney, Horace O. Bright,
John McSorley.

ON LICENSES.

Theodore C. Hurd, James C. Davis,
Francis H. Whitman.

ON HEALTH.

Augustus P. Clarke, William L. Whitney,
John McSorley.

Standing Committees of the Common Council.

ON ELECTIONS AND RETURNS.

Frank D. Wheeler, Alexander Fraser,
Edmund Reardon.

ON BILLS IN THE SECOND READING.

Thomas H. Emerson, Charles Quinn,
John J. Fatal.

ON ENROLLED ORDINANCES.

Charles C. Read, Samuel L. Montague,
Sulvilyer H. Sanborn.

Clerk of Committees.

J. Warren Cotton.

Board of Health.

THE MAYOR AND ALDERMEN.

Health Officers.

George H. Copeland, Benjamin F. Bridden,
Timothy Ames, Amos Jones.

Surveyors of Highways.

The same persons who compose the Board of Mayor and Aldermen.

Auditor of Accounts.

Justin A. Jacobs.

Treasurer.

Joseph Whitney.

Assessors.

Andrew J. Green, Levi L. Cushing, Jr.,
Artemas Z. Brown.

Assistant Assessors.

Thomas Stearns, B. J. McCormic,
Samuel Sanders, Benjamin F. Nourse,
James H. Cutter.

School Committee.

Isaac Bradford, Mayor, *ex officio*, *Chairman*.

Ward I.

Alexander McKenzie, Andrew P. Peabody,
Edwin B. Hale.

Ward II.

Henry Hinckley, William S. Karr,
Edward R. Cogswell.

Ward III.

—— —— Samuel W. McDaniel,
—— ——

Ward IV.

George R. Leavitt, George E. McNeil,
James A. Dow.

Ward V.

—— —— William S. Apsey,
Philip R. Ammidon.

Secretary.

W. W. Wellington.

Superintendent of Schools.

—— ——

Overseers of the Poor.

The Mayor, *ex officio*, *Chairman.*

One Year.	Two Years.
Sylvanus M. Parsons,	Benjamin F. Wyeth,
James Cox,	Alfred L. Barbour,
Lewis B. Guyer.	Jeremiah H. Mulcahy.

Clerk.

Benjamin F. Wyeth.

Warden of the Almshouse.

Joseph W. Averill.

Physician of the Almshouse.

James R. Morse, M.D.

Cambridge Cemetery.

Commissioners.

The Mayor, *ex officio*.

George S. Saunders, John M. Tyler,
George T. Gale, Curtis Davis,
William Page, William L. Lockhart.

Superintendent.

James K. Farwell.

Trustees of Dana Library.

The Mayor, *ex officio*, *Chairman*.

Alderman. Common Council.

William L. Whitney. George F. Piper.

Citizens at Large.

—— —— John S. March,
Charles Deane.

Librarian. Secretary.

Miss Caroline F. Orne. George F. Piper.

Cambridge Water Board.

The Mayor, and President of the Common Council, *ex officio*.

George P. Carter, J. Warren Merrill,
Samuel Slocomb, Chester W. Kingsley (President),
Henry L. Eustis.

Clerk.

Justin A. Jacobs.

Trustees of Sinking Fund of Water Loan.

The Mayor, City Treasurer, and the President of the Common Council.

Commissioners on Sinking Funds of the City.

The Mayor, City Treasurer, Alderman Morse, and the President of the Common Council, *ex officio*.

John M. Tyler, Lewis Hall,
John Brewster.

Superintendent of Water Works.

Samuel W. Dudley.

Water Registrar.

Abiel F. Fifield.

Trustees of the Sanders Temperance Fund.

The Mayor, and President of the Common Council, *ex officio*.

Alderman.	Common Council.
John McSorley.	John J. Fatal,
	Alexander Fraser.

Trustees of the Dowse Institute.

The Mayor, and President of the Common Council, *ex officio*.

John C. Dodge, William W. Wellington,
Willard A. Bullard.

Representatives in General Court.

Levi L. Cushing, Jr., Joshua B. Smith,
Daniel H. Thurston, Curtis Davis,
Jeremiah W. Coveney.

Police Court.

Standing Justice.

JOHN S. LADD.

Special Justices.

Henry W. Muzzey,
Woodward Emery.

Clerk.

Thomas McIntire.

City Solicitor.

JOHN W. HAMMOND.

City Engineer.

JOSIAH G. CHASE.

Commissioner on West Boston and Craigie's Bridges.

EZRA PARMENTER.

Superintendent of Streets.

GEORGE L. CADE.

Superintendent of Lamps.

JOHN CAHILL.

Board of Engineers.

Chief Engineer.

PATRICK H. RAYMOND.

Assistant Engineers.

First Assistant	Thomas J. Casey.
Second Assistant	Richard F. Tobin.
Third Assistant	Daniel O'Connell.
Fourth Assistant	John P. Farmer, Jr.

Clerk of the Board.

John P. Farmer, Jr.

Police Department.

Chief of Police.

GEORGE H. COPELAND.

Captains of Police.

DISTRICT I.
Timothy Ames.

DISTRICT II.
William Twist.

DISTRICT III.
John L. Boynton.

Captain of Night Police.

Frederick W. Hagar.

Policemen.

DISTRICT I.

Thomas D. Cook,
James B. Morse,
Micah W. Cook,
Andrew Sproul,
Andrew G. Smith,
George A. Marston,
Benjamin Kennard,
L. J. Cloyes,
William T. Gibson,
James Miller,
Leonard Shackford,
Daniel Callahan,
William H. Fitzpatrick,
John Le Barron,
Jacob A. Holt,
Frederic B. Pullen,
Albert D. Cleveland,
Henry M. Tyler.

DISTRICT II.

Benjamin F. Bridden,
Daniel Sherman,
James H. Parks,
George Wood,
Warner W. Simonds,
John Coleman,
Calvin C. Smith,
Luther Hapgood,
Simon D. Hiscock,
Rufus S. Downe,
George Cox,
Charles B. Jones,
James E. Murray,
John Little,
Thomas S. Hall,
Charles W. Rugg.

DISTRICT III.

William Mullett,
Dennis Corcoran,
Moses W. Hooper,
John F. Murray,
Matthew R. Moore,
Amos Jones,
David N. McCleary,
Stephen E. Day,
John Collier,
Warren A. Eaton,
Otis Dennison.

Special Policemen.

P. H. Raymond,
Thomas J. Casey,
Joseph H. Marvin,
Samuel W. Dudley,
Daniel O'Connell,
John P. Farmer, Jr.,
Thomas H. Eames,
Edward F. Belcher,
Roland Litchfield,
John Fitzgerald,
Charles L. Russell,
William L. Locklin,
G. C. W. Fuller,
J. L. P. Ackers,
Charles H. Wiggin,
William McKeever,
B. A. Brown,
Russell L. Towner,
Lucius A. Buck,
James F. Jefferds,
Joseph W. Averill,
Roland Litchfield, Jr.,
James C. Wilder,
Thomas McIntire,
James K. Farwell,
Hiram Nevons,
James M. Learned,
George Henderson,
George Dale,
Jesse H. Kittredge,
Thomas W. Penney,
George Smith,
Charles P. Allen,
Samuel F. Hunt,
George J. Sutton,
Joseph Bebo,
Alexis Brusseau,
Anthony Chalifrau,
Patrick Dunnigan,
Moore R. Hosmer,
John S. Stafford,
Thomas Cowen,
Noah M. Cofran,
John Mahady,
Alex. F. Shepherd,
Edward E. Farrar,
William Hunnewell,
Daniel R. Melcher,
John Hughes,
Frank Goudraw,
Fred. H. Greenwood,
Frank J. Curtis,
Wells Simpson,
Benjamin F. Livingston,
Charles A. Gay,
James W. Lovering,
George B. Lothrop,
Orlando B. Richardson,
E. W. Hoffses,
John W. Skelley,
Richard F. Tobin,
Charles H. Winslow,
Joseph Collins,
E. G. Hall,
George T. Barrington,
Michael Ginty,
John L. Sproul,
Joseph Smith,
William Kelly,
Henry Kneeland,
E. F. Young,
George Putnam,
Thomas Briney,
George S. Pike,
William Nickelson,
Henry T. Weltch,
William H. Grieves,
A. A. Barker,
G. E. S. Hutchins,
William Martin.

Keepers of Lock-ups.

George H. Copeland,
Timothy Ames,
William Twist,
John L. Boynton,
Thomas D. Cook,
Daniel Sherman,
Warner W. Simonds.

Truant Officers.

Mark J. Folsom,
Moses M. Child,
George S. Dudley,
Augustus P. Griffing,
Francis M. Mason.

Constables.

George H. Copeland,
William Twist,
John L. Boynton,
John C. Burdakin,
Thomas Work,
Thomas McIntire,
Charles H. Hunnewell,
Charles J. Adams,
James F. Jefferds,
Peter Rice,
William Dickson,
William McKeever,
Warner W. Simonds,
Thomas D. Cook,
Charles L. Russell,
Benjamin King,
Patrick H Raymond,
Thomas T. Ferguson,
Timothy Ames,
John Cahill,
M. S. Busnach,
John W. Skelley.

Superintendent of Burial Ground.

Ward I.

Benjamin F. Wyeth.

Undertakers.

Benjamin F. Wyeth,
Roland Litchfield,
Samuel F. Hunt,
Thomas Devens,
John W. Coveney,
Judson Litchfield,
William Casey,
C. Henry Lockhart,
Alvah A. Hadley,
Benjamin J. Hoyt,
W. A. Taylor,
William C. Walker.

Auctioneers.

Samuel R. Knights,
John C. Farnham,
John L. Porter,
Edward Burnham,
George C. Hosmer,
George O. Knox,
Henry A. Burkett,
Benjamin King,
William A. Munroe,
Samuel C. Knights,
Jeremiah W. Coveney,
James C. Wilder,
John Cahill,
Edward Burnham,
Reuben A. Adams,
Edwin P. Henderson,
T W. Ray.

Fence-Viewers.

George B. Lothrop,
Abiel Goss,
Abel Stevens.

Field-Drivers.

Thomas D. Cook,
James B. Morse,
Micah W. Cook,
Andrew Sproul,
Andrew G. Smith,
George A. Marston,
Benjamin Kennard,
L. J. Cloyes,
James Miller,
William T. Gibson,
Benjamin F. Bridden,
Daniel Sherman,
James H. Parks,
George Wood,
Warner W. Simonds,
John Coleman,
Thomas S. Hall,
Charles W. Rugg,
William Mullett,
Dennis Corcoran,
Moses W. Hooper,
John F. Murray,
Leonard Shackford,
Daniel Callahan,
William H. Fitzpatrick,
John Le Barron,
Frederic B. Pullen,
Albert D. Cleveland,
Henry M. Tyler,
Jacob A. Holt,
Luther Hapgood,
Simon D. Hiscock,
Rufus S. Downe,
Charles B. Jones,
James E. Murray,
John Little,
Calvin C. Smith,
Matthew R. Moore,
Amos Jones,
David N. McCleary,
Stephen E. Day,
John Collier,
Otis Dennison,
Warren A. Eaton.

Measurers of Wood and Bark.

John R. Taylor, Benjamin J. Hoyt,
Francis H. White, J. Henry Wyman,
John F. Brine.

Pound-Keepers.

James Gilligan, Thomas D. Cook,
George A. Marston.

Fish Officers.

Thomas D. Cook, Joseph W. Averill,
Andrew Sproul.

Hay Weighers.

Timothy Sullivan, Francis H. White,
William C. Brooks, John F. Brine,
William H. Dodge, H. P. Ross.

Coal Weighers.

James F. Jefferds, William C. Brooks,
John F. Brine, Jones Valentine,
Thomas McIntire, Alfred H. Wellington,
William A. Hunnewell, H. P. Ross,
J. Henry Wyman, Malachi Mullen.

Weigher of Boilers and Heavy Machinery.

H. P. Ross.

Weighers.

Joseph W. Averill, H. P. Ross,
Patrick Dunnigan, James H. Reardon,
Edmund Reardon, Henry Hooker,
Thomas Ralph.

Sealer of Weights and Measures.

John Cahill.

Inspector of Milk.

John Cahill.

Surveyors of Mechanics' Work.

William S. Barbour, William A. Mason,
John S. Pollard.

Measurer and Surveyor.

E. F. Young.

Inspector of Charcoal Baskets.

John Cahill.

Measurer of Grain.

John Cahill.

Inspectors of Junk Shops.

George H. Copeland, Amos Jones,
Warner W. Simonds.

Ward Officers.

Ward I.

WARDEN.
Charles H. Bate.

CLERK.
John Gorman.

INSPECTORS.
Joseph Williams,
John C. Heymer,
Joseph R. Pettingill.

Ward II.

WARDEN.
James W. Pierce.

CLERK.
Harry B. Winnett.

INSPECTORS.
Charles F. Thurston,
Charles E. Pierce,
James H. Davis.

Ward III.

WARDEN.
Luther L. Parker.

CLERK.
Andrew Fogg.

INSPECTORS.
Augustus W. Fix,
Daniel Shaughnessy,
John W. Coveney.

Ward IV.

WARDEN.
Charles L. Russell.

CLERK.
Benjamin F. Hastings.

INSPECTORS.
Albert J. Sawyer,
William H. Ackers,
Emmet Weeks.

Ward V.

WARDEN.
Francis M. Mason.

CLERK.
Francis H. White.

INSPECTORS.
Charles L. Fuller,
Henry K. Parsons,
Charles F. Fay.

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